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AUTHORITY

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AUTHORITY

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Amie

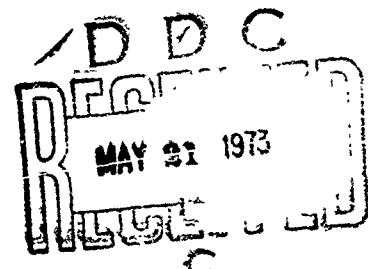
MC REPORT 011

Volume 7

ACOUSTIC ENVIRONMENTAL SCENARIOS
AND
PREDICTIONS FOR ASW

VOLUME 7
AREA 3A, SUMMER
PREDICTIONS FOR PASSIVE SONAR

October 1972



LONG RANGE ACOUSTIC PROPAGATION PROJECT



OCEAN SCIENCE PROGRAM
MAURY CENTER FOR OCEAN SCIENCE
Department of the Navy
Washington, D.C.

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Test and Evaluation; 5 JUN 1973. Other requests
for this document must be referred to

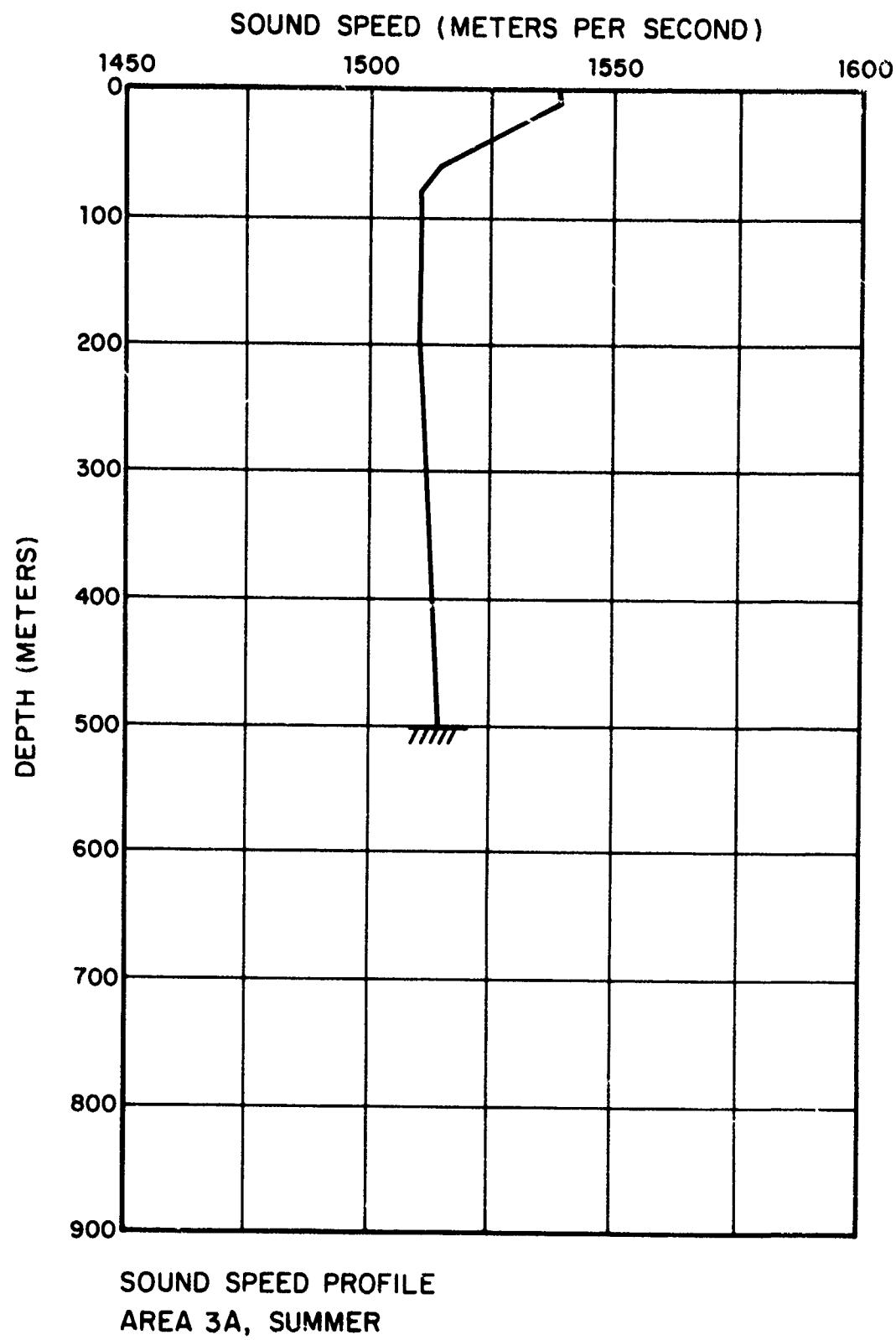
[REDACTED]
Director, Long Range Acoustic Propagation Project (ONR Code 102-OS).

Arlington, Va. 22217

ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS
FOR ASW

Volume VII: AREA 3A SUMMER
PREDICTIONS FOR PASSIVE SONAR

Refer to Volume I of this report for an explanation of the plot format and descriptions of models and ocean areas.



70

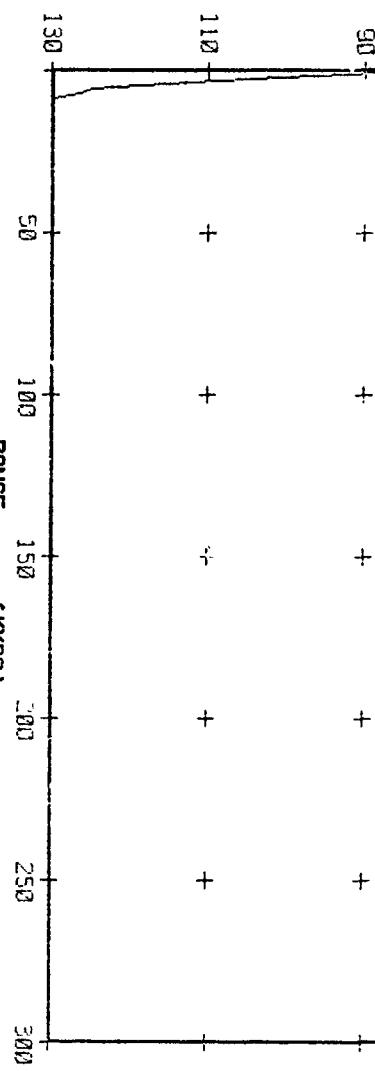
ARR 3R SUMMER

S 20 R 60 F 10

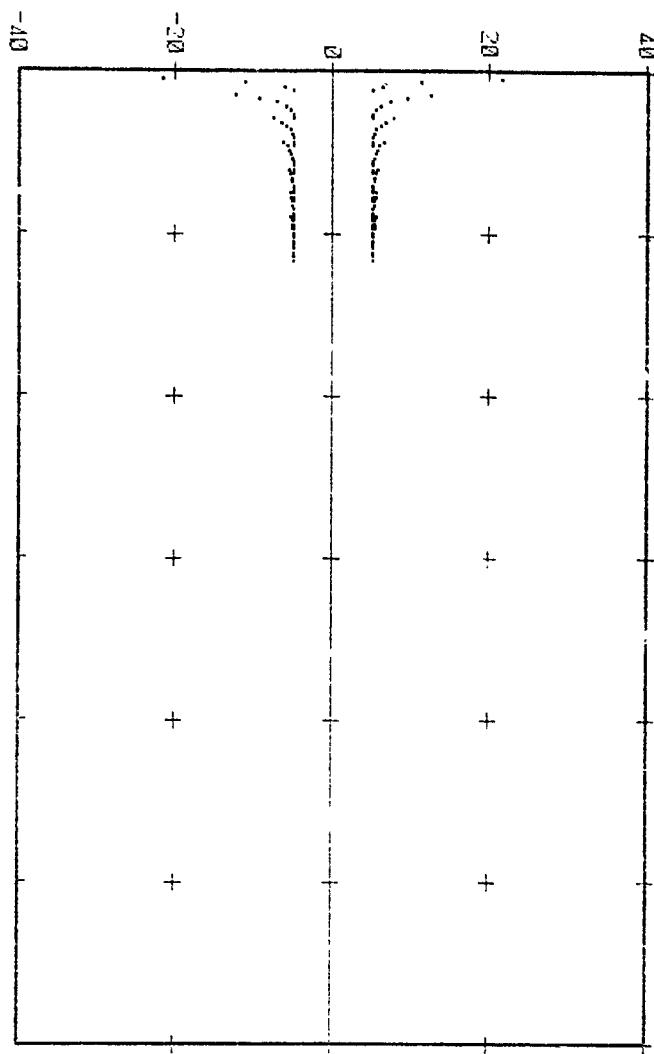
1450 M/S 1500 1550

LRAPP

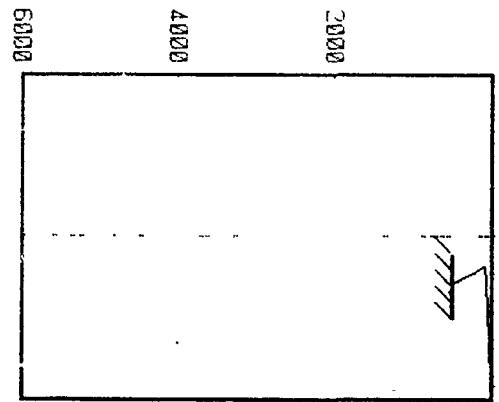
DB LOSS



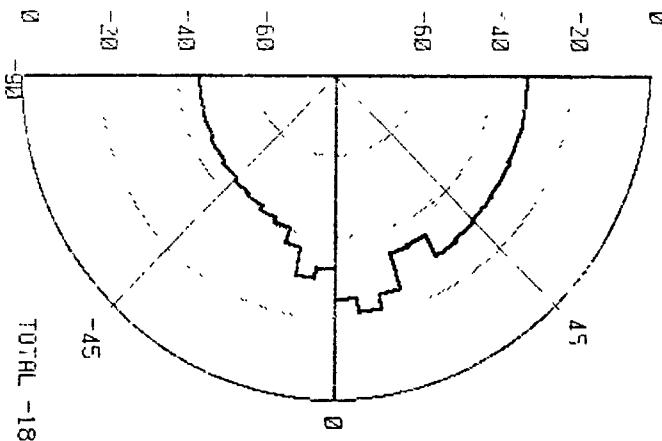
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -18.7 DB

AREA 3A SUMMER

S 50 R 60 F 10

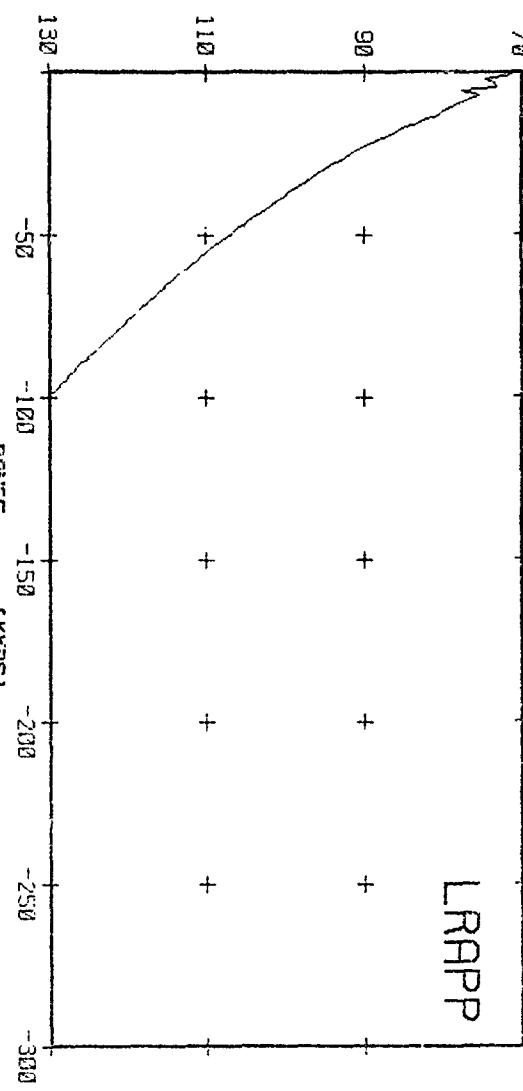
1450 M/S 1500 1550

70

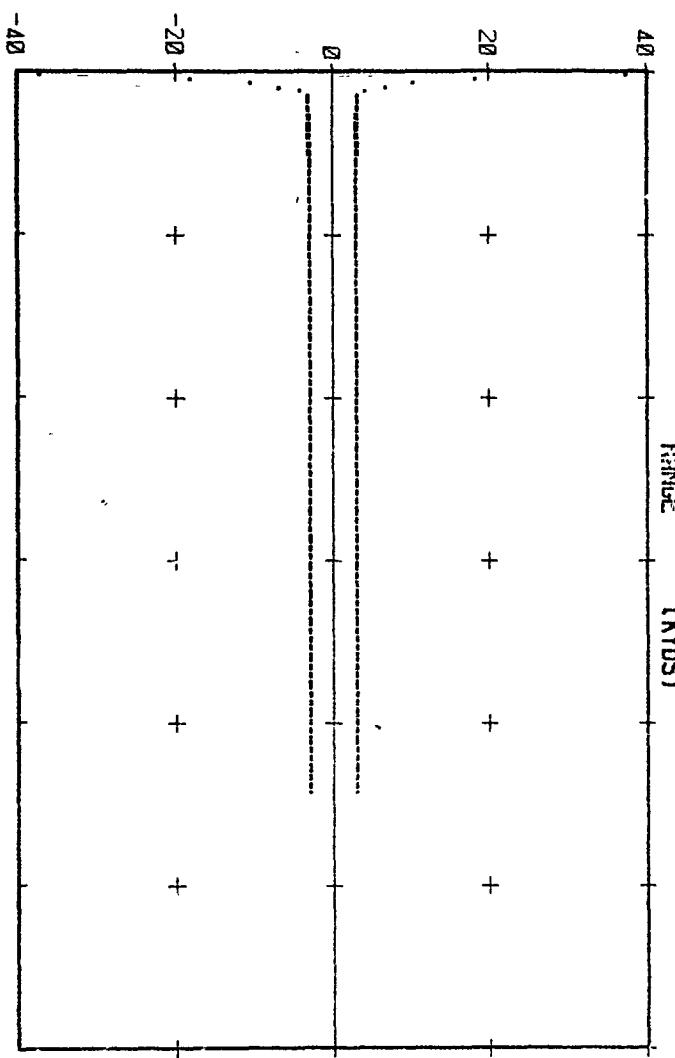
LRAAPP

17777

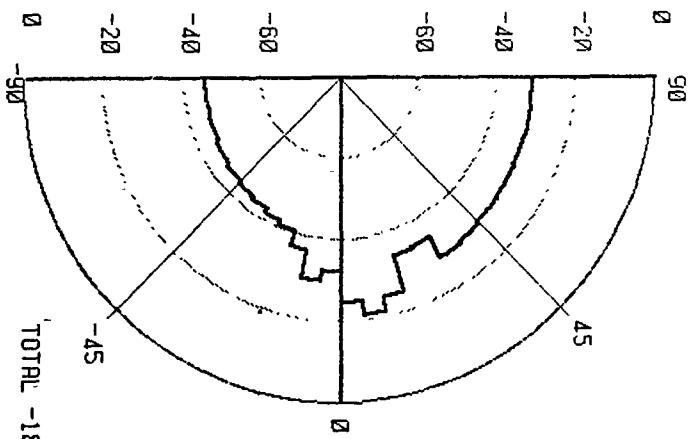
DB LOSS



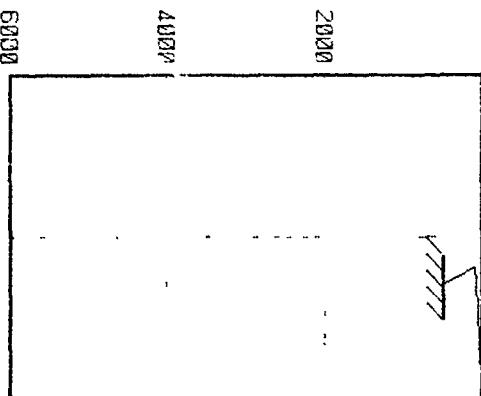
ARRIVAL ANGLE



NOISE (DB)



DEPTH IN METERS



70

AREA 3A SUMMER

S 233 R 60 F 10

1450 M/S 1500 1550

LRAPP

DB LOSS

90

+

+

+

+

+

+

+

130
110
40
-50 -100 -150 -200 -250 -300

RANGE (KILOMETERS)

ARRIVAL ANGLE

40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
-280
-300

NOISE (DB)

DEPTH IN METERS

2000

4000

6000

0

90

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

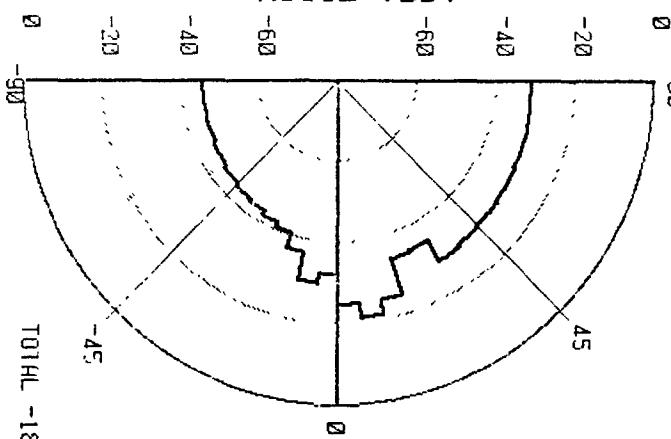
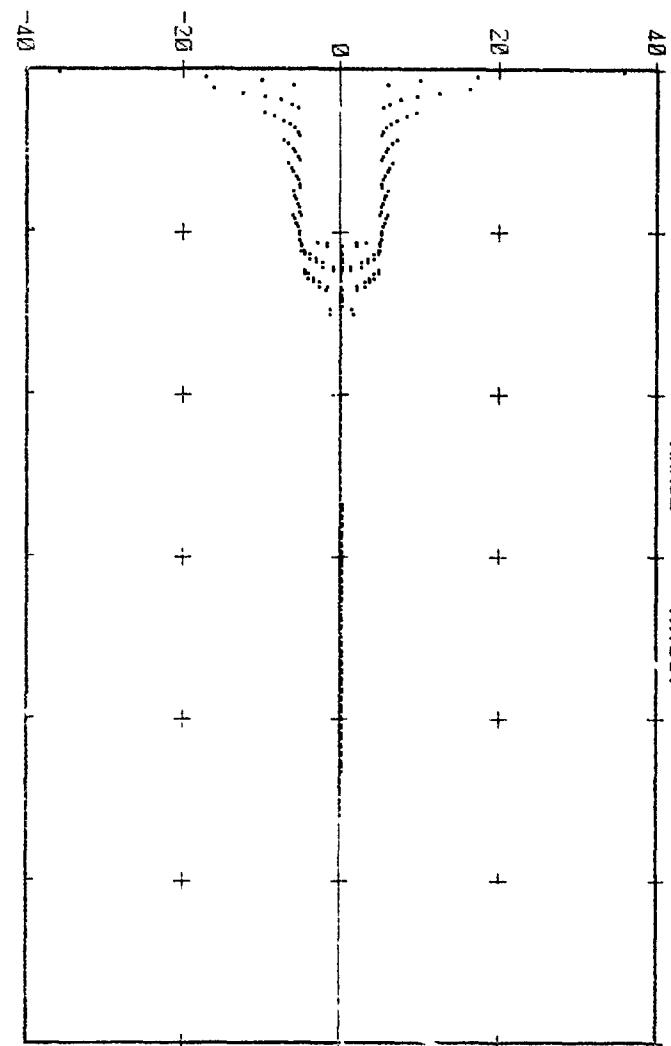
-220

-240

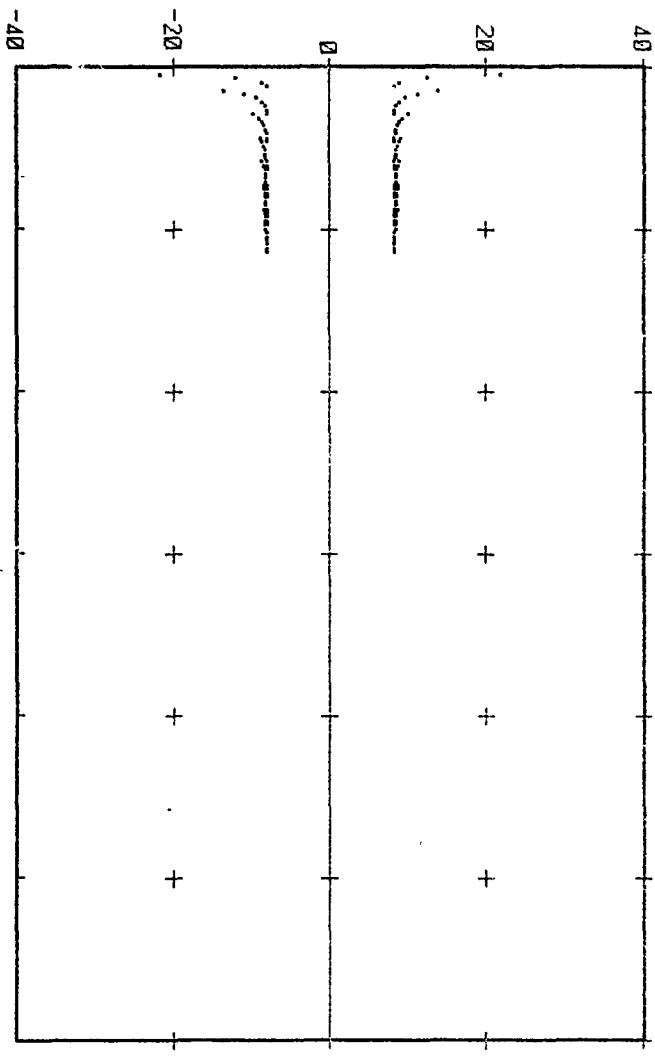
-260

-280

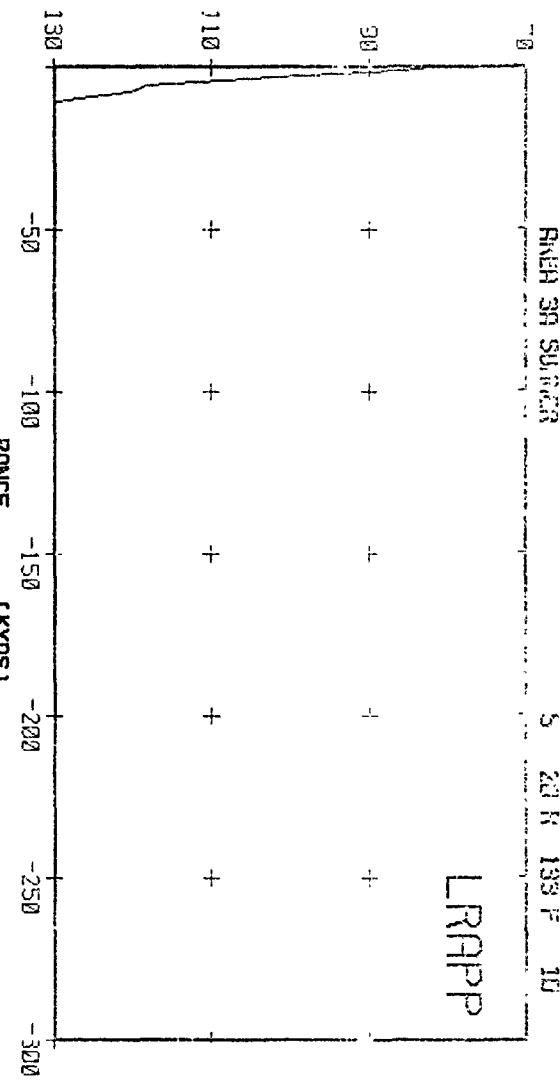
-300



ARRIVAL ANGLE

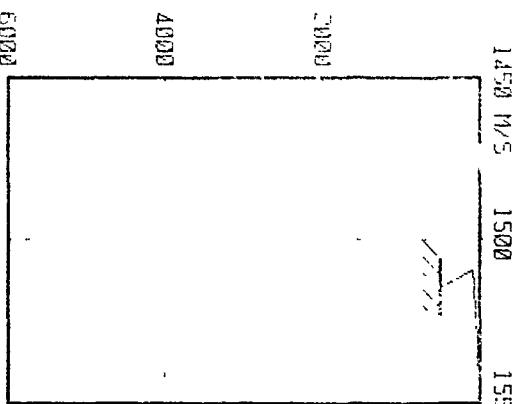


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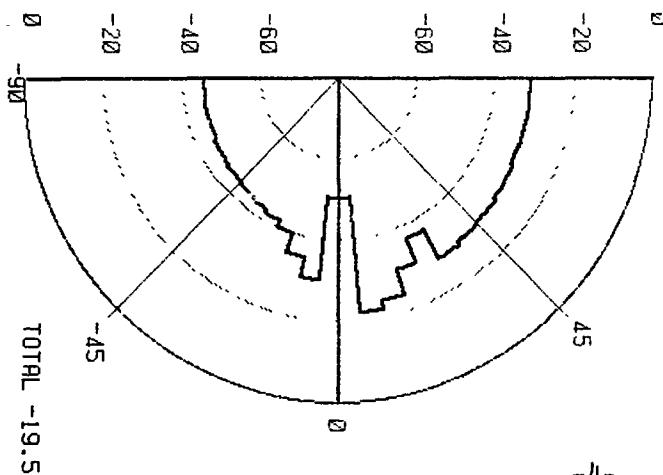


LRRPP

DEPTH IN METERS



NOISE (DB)



-4-

TOTAL -19.5 DB

70

ARRER 3A SUMMER

S 50 R 193 F 10

1450 M/S

1500

1550

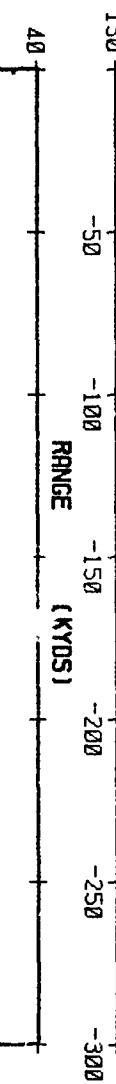
DB LOSS

90

+ + + + +

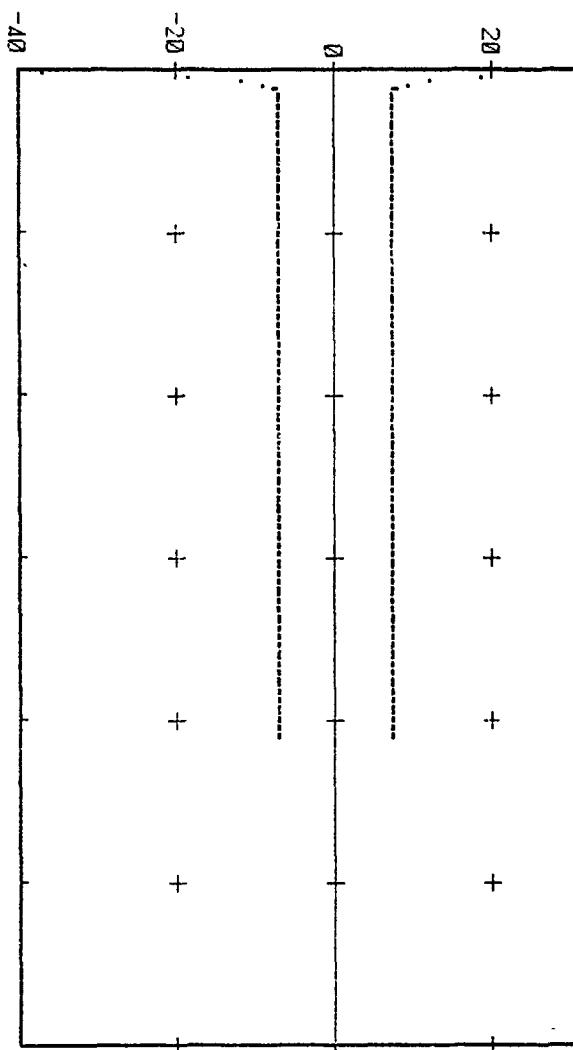
110

+ + + + +



RANGE (Km/s)

ARRIVAL ANGLE



20

+ + + + +

-20

+ + + + +

-40

+ + + + +

DEPTH IN METERS

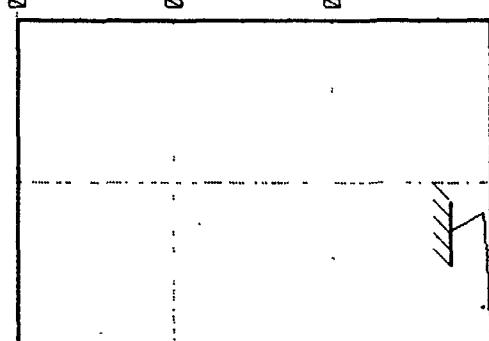
2000

4000

6000

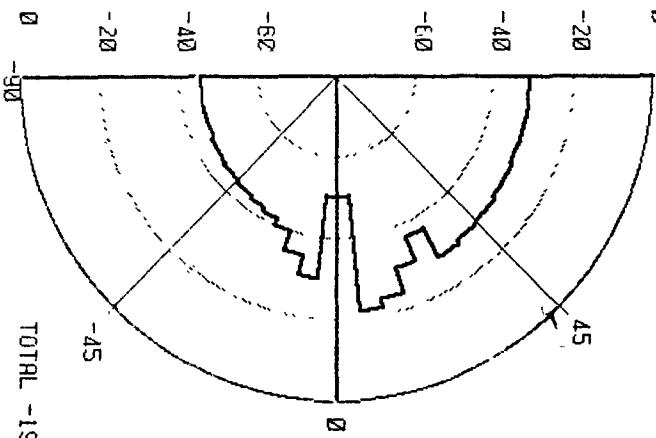
0

90



LRAPP

NOISE (DB)



-5-

TOTAL -19.5 DB

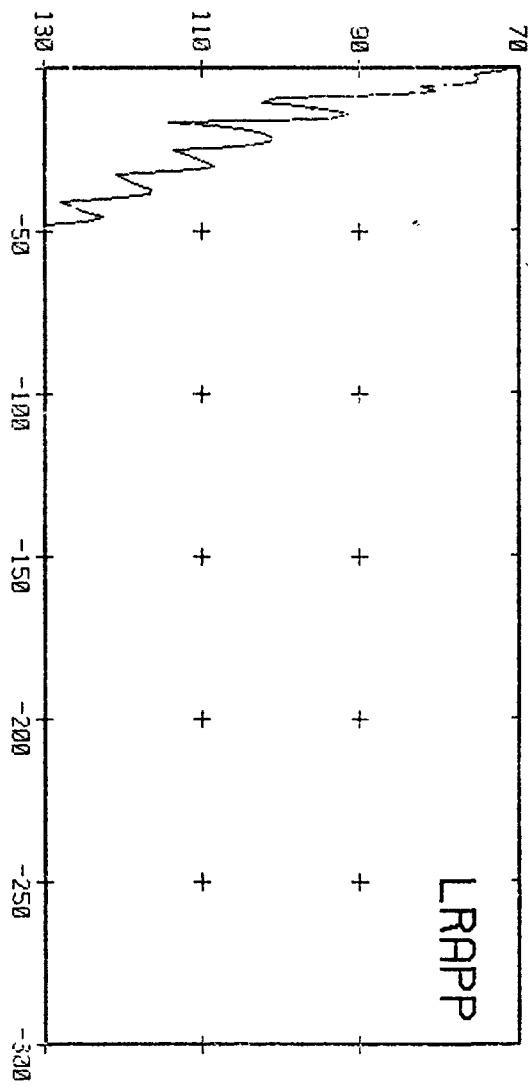
ARER 3A SUMMER

S 233 R 133 F 10

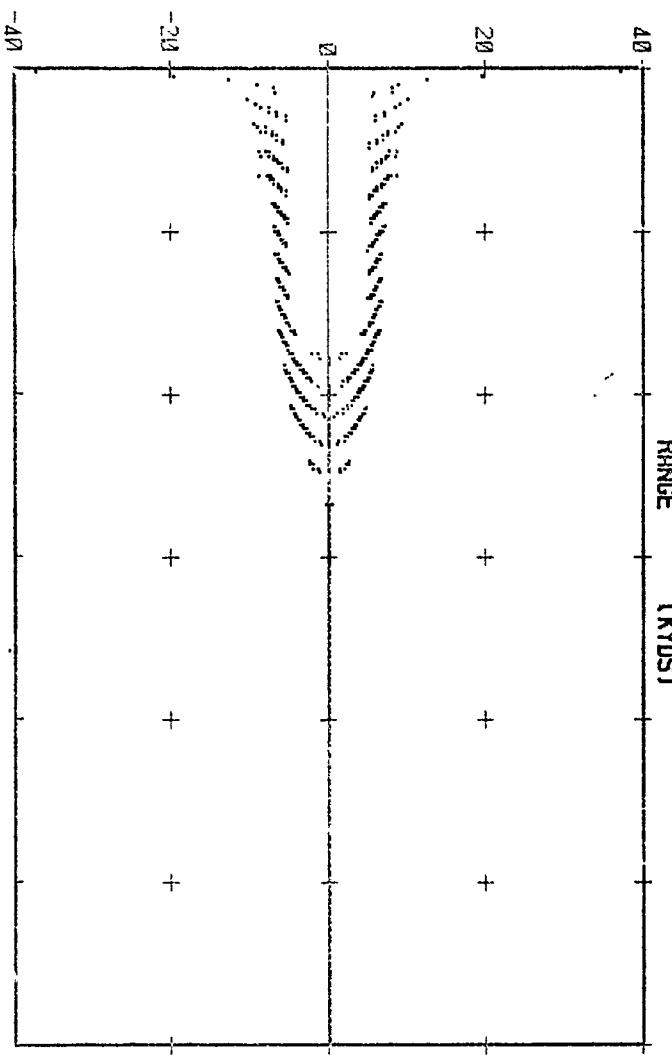
1450 M/S 1500 1550

LRAAPP

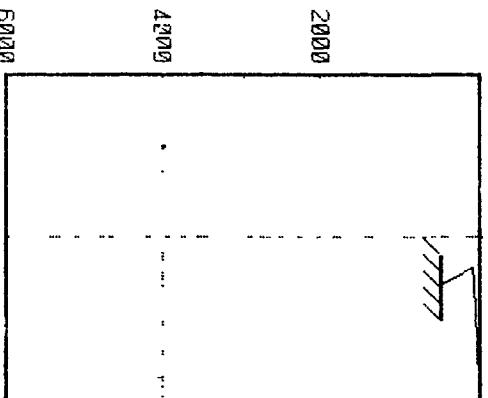
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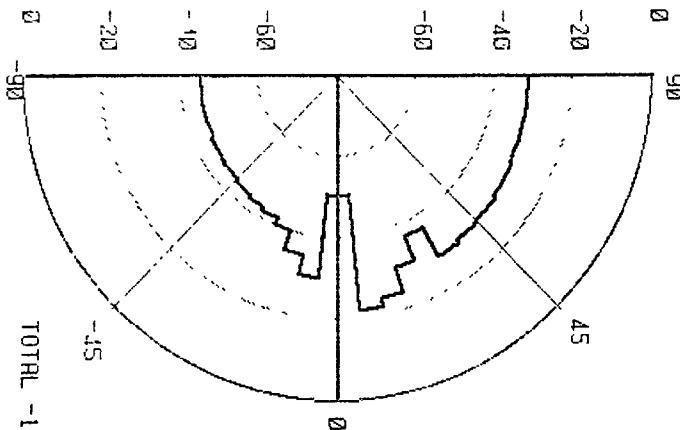
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -19.5 DB

76

AREA 3A SUMMER

S 20 R 262 F 10

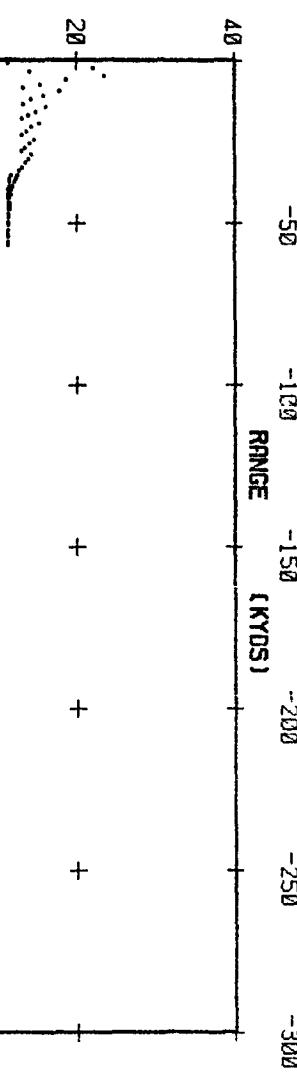
1450 M/S 1500 1550

LRAPP

DB LOSS

90
110
+ + + +
+ + + +
+ + + +
+ + + +

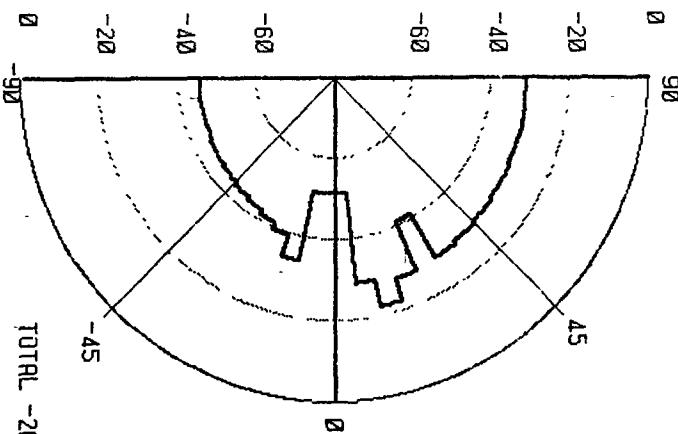
DEPTH IN METERS

2000
4000
6000

ARRIVAL ANGLE

20
-20
+ + + +
+ + + +
+ + + +
+ + + +

NOISE (DB)



TOTAL -20.4 DB

AREA 3A SUMMER

S 50 R 262 F 10

1450 M/S 1500 1550

LRAAPP

DB LOSS

130
110
90
70
50
30
10
0

-100 -150 -200 -250 -300

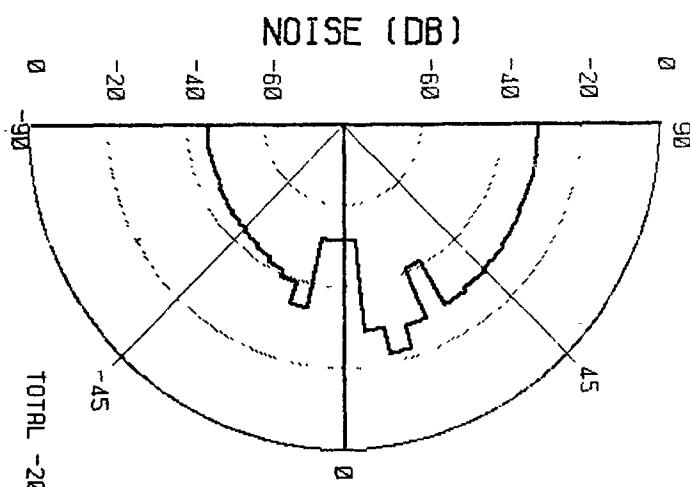
RANGE [KVUS]

ARRIVAL ANGLE

-20 +
+ +
+ +
+ +
+ +
+ +
+ +
+ +

DEPTH IN METERS

6000
4000
2000
0



TOTAL -20.4 DB

TB

AKER 39 SURGER

S 233 R 262 F 16

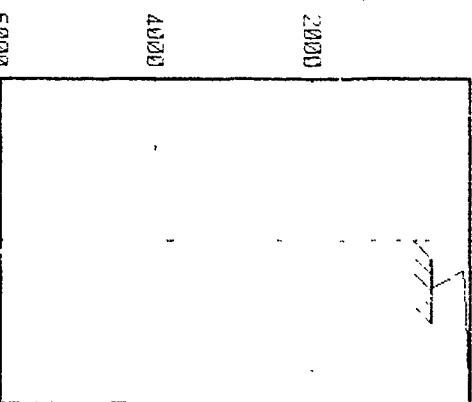
1450 M/S 150°C 1550

LRAPP

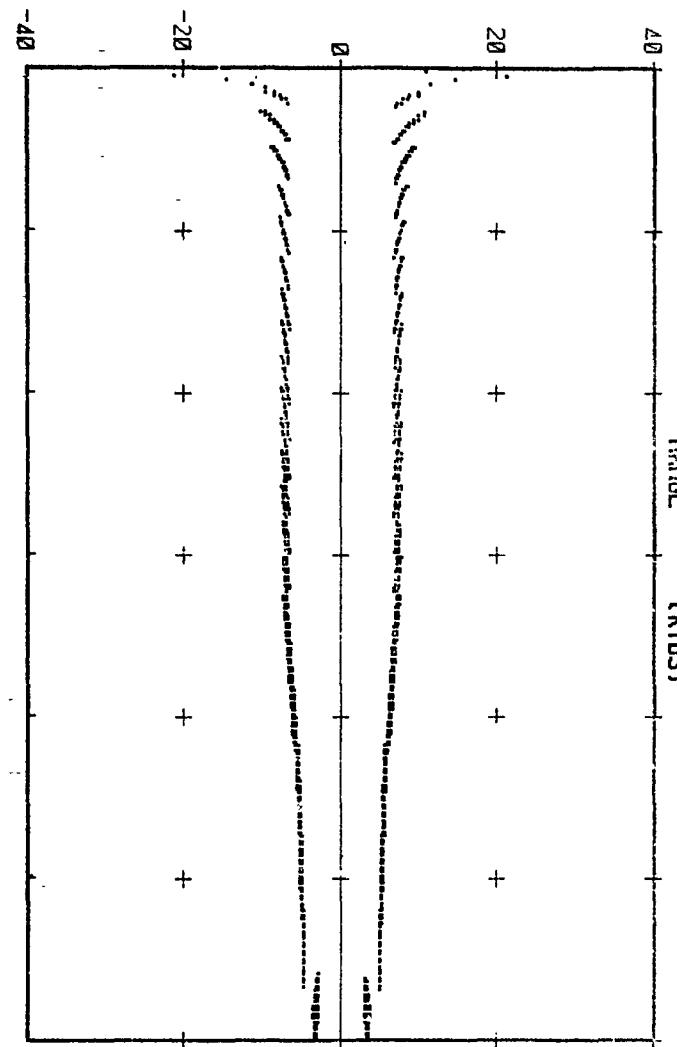
DB LOSS



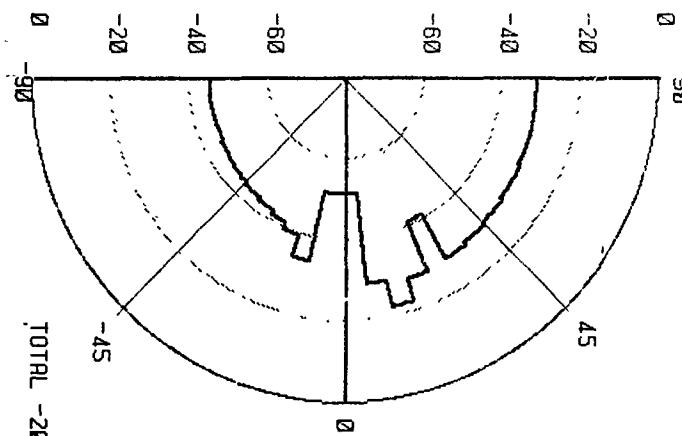
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



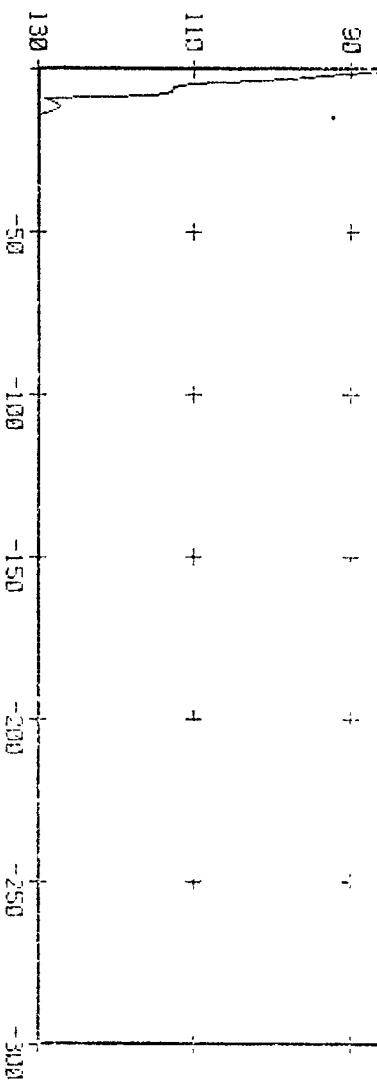
RIVER 3R SUMMER

S 20 R 30 F 15

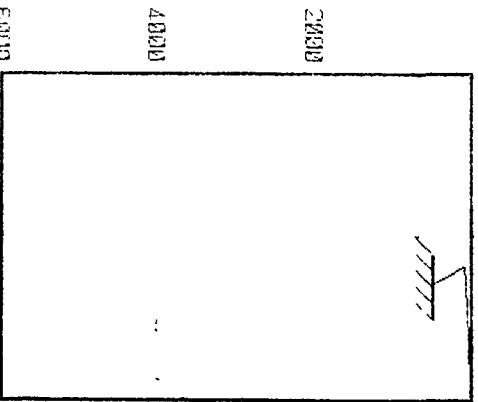
1450 M/S 1500 1550

LRRP1P

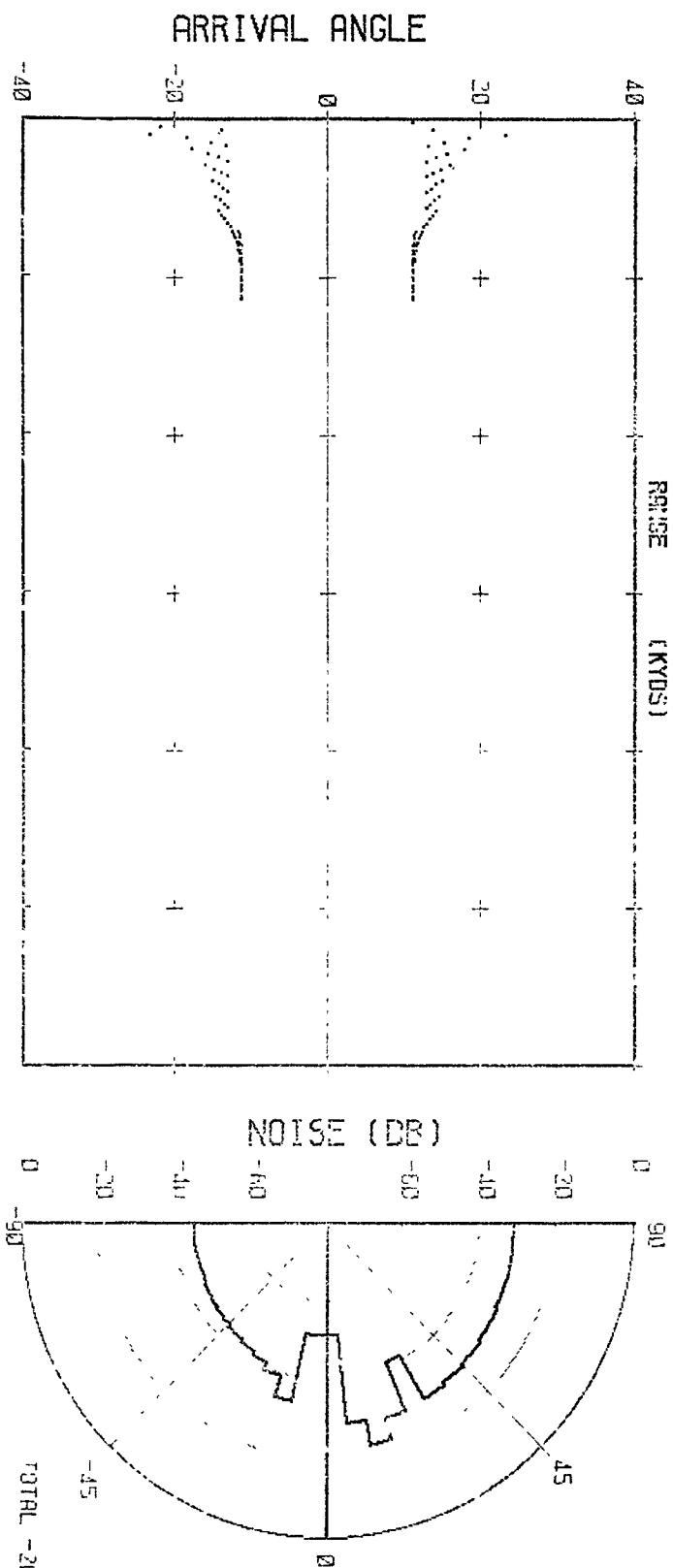
DB LOSS



DEPTH IN METERS



NOISE (DB)



AREA 3A SUMMER

S 50 R 300 F 10

1450 M/S 1500 1550

L RAPP

DB LOSS

90 + + + + +

110 + + + + +

130 + + + + +

130
110
90
-50 -100 -150 -200 -250 -300

RANGE

(KTS)

ARRIVAL ANGLE

20 + + + + +

0 + + + + +

-20 + + + + +

-40 + + + + +

-60 + + + + +

-80 + + + + +

-100 + + + + +

-120 + + + + +

DEPTH IN METERS

2000

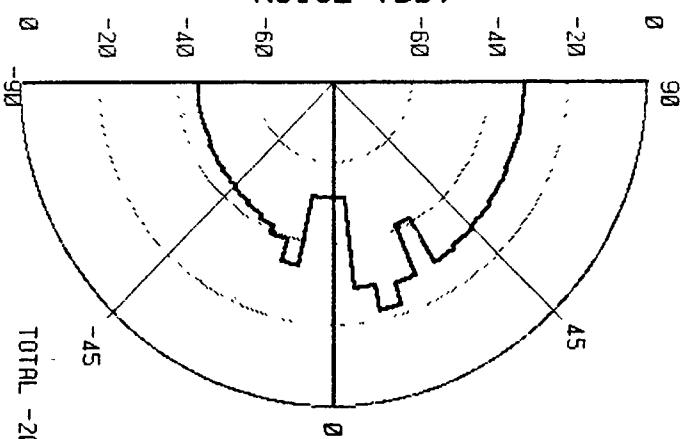
4000

6000

8000



NOISE (DB)



FREQUENCIES

S 233 R 300 F 10

1450 M/S 1500 1550

7B

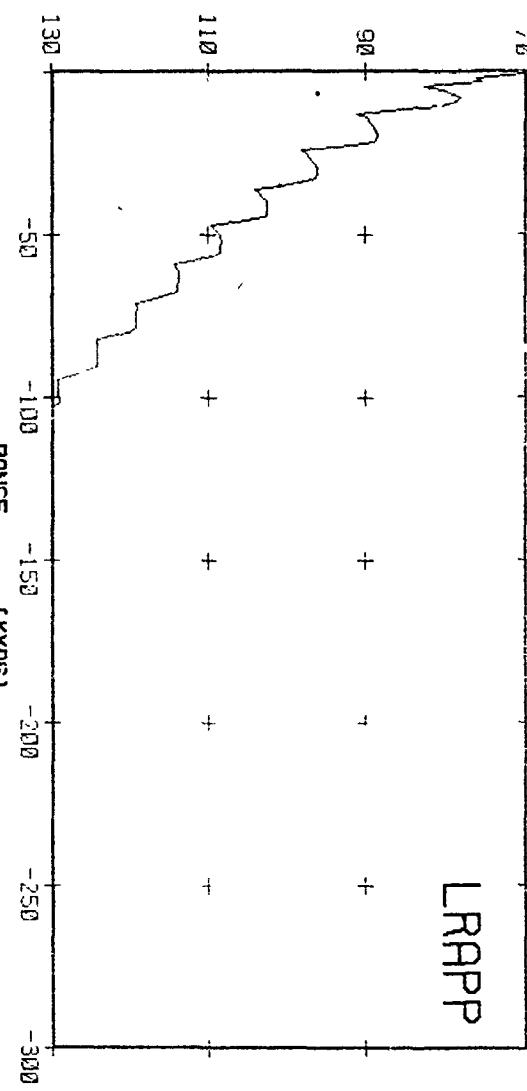
2020

10000

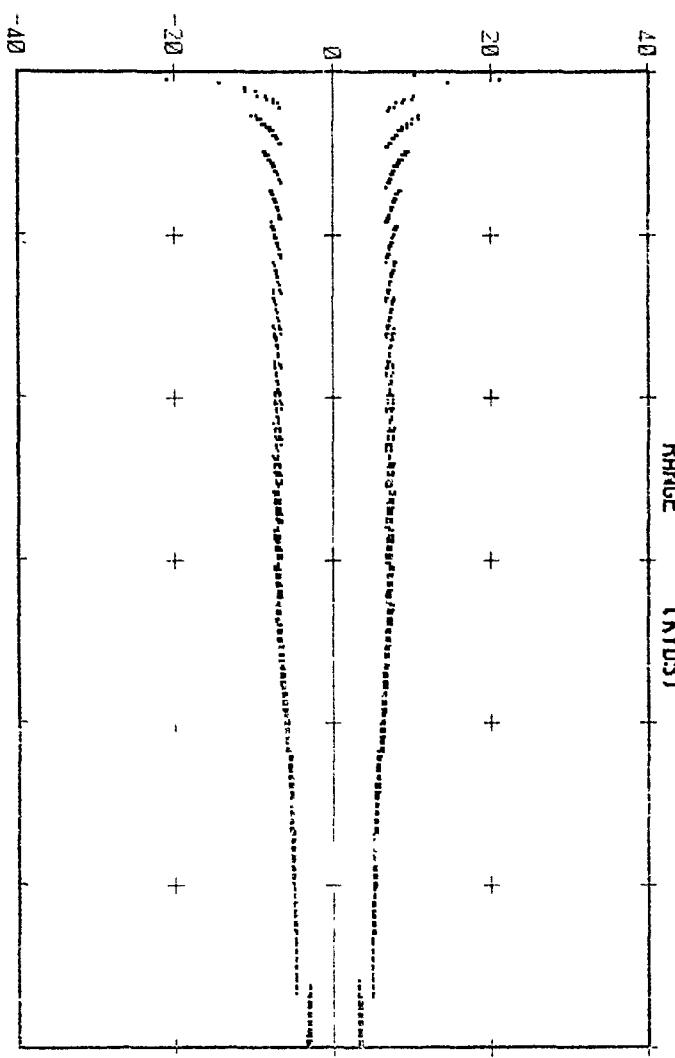
1550

LRAFP

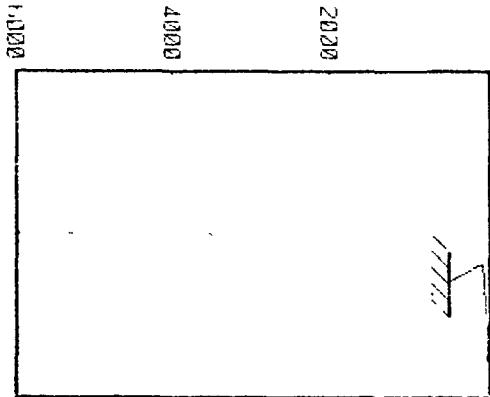
DB LOSS



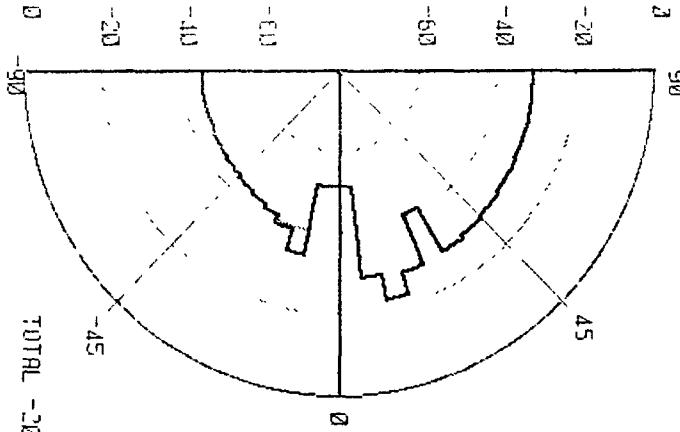
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -20.4 DB

70

FINGER 3R SIGHTER

S 20 R 1050 F 10

1450 M/S 1500 1550

LRAPP

DB LOSS

90

+

+

+

+

+

+

+

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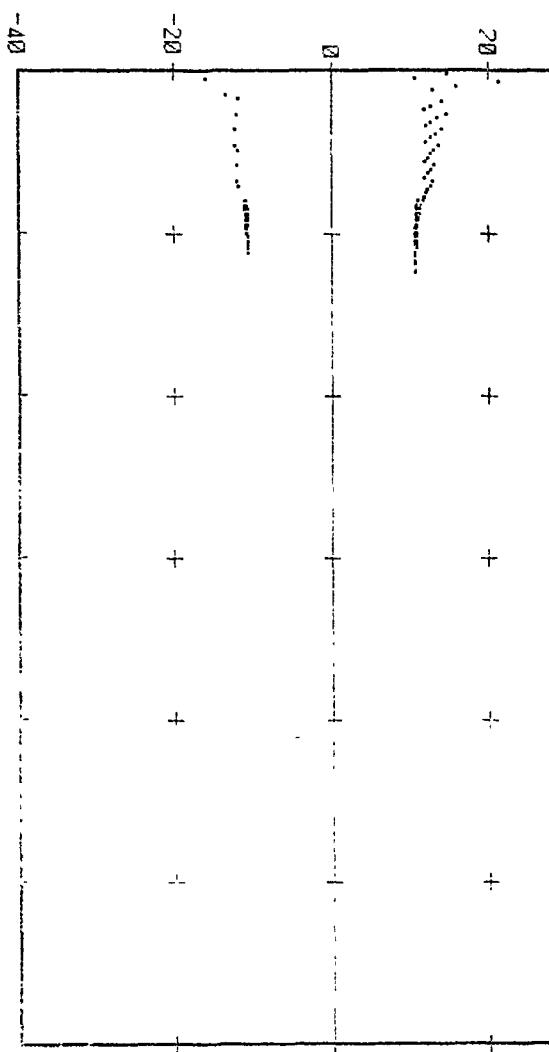
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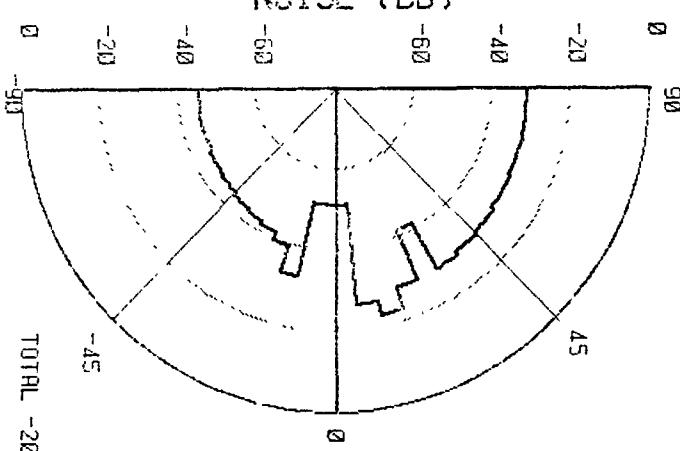
130
40
-50
-100
-150
-200
-250
-3006000
4000
2000

DEPTH IN METERS

ARRIVAL ANGLE



NOISE (DB)



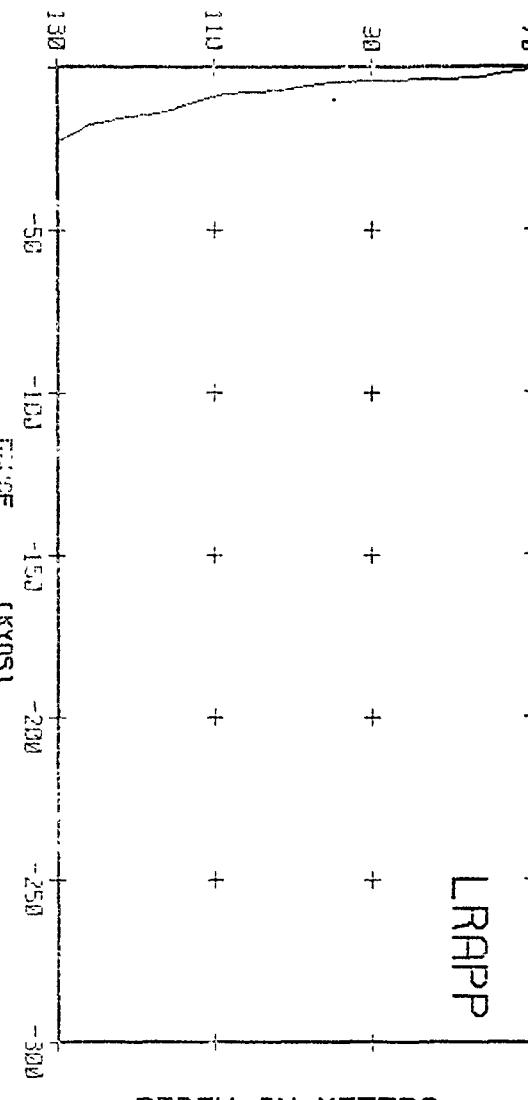
RIVER 3A SUMMER

S 50 R 1862 F 10

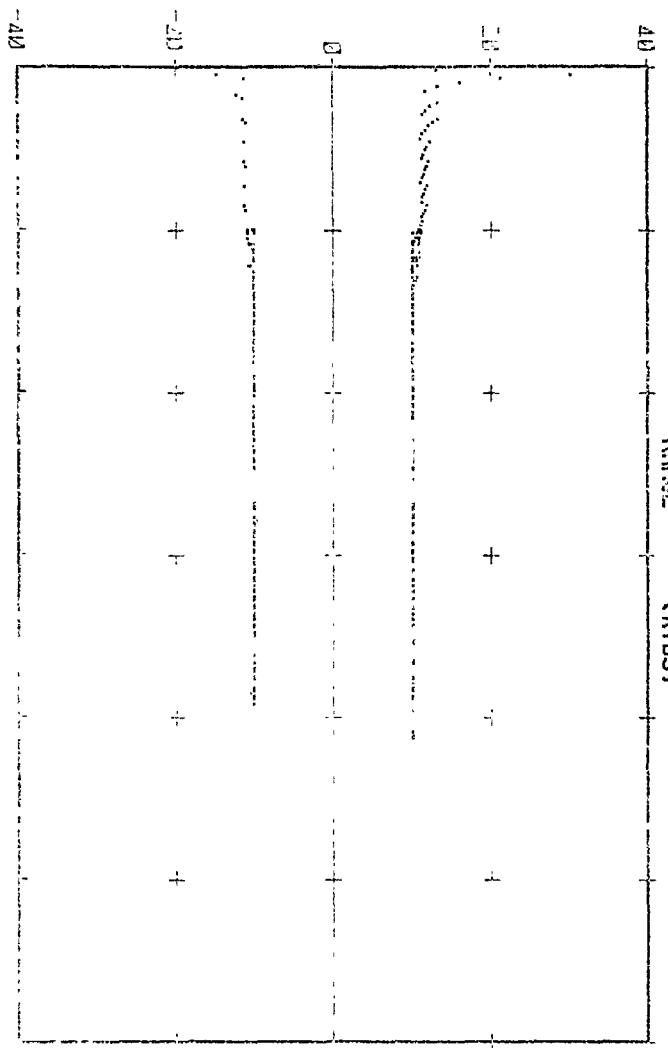
1450 M/S 1500 1550

LRAAPP

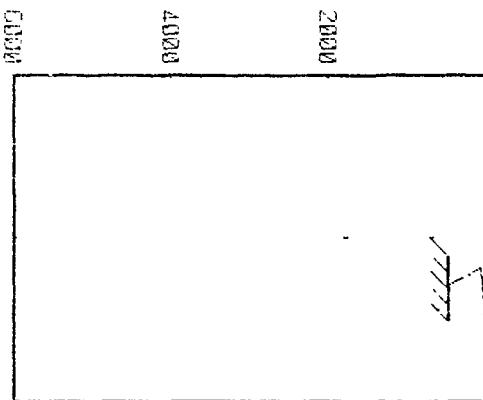
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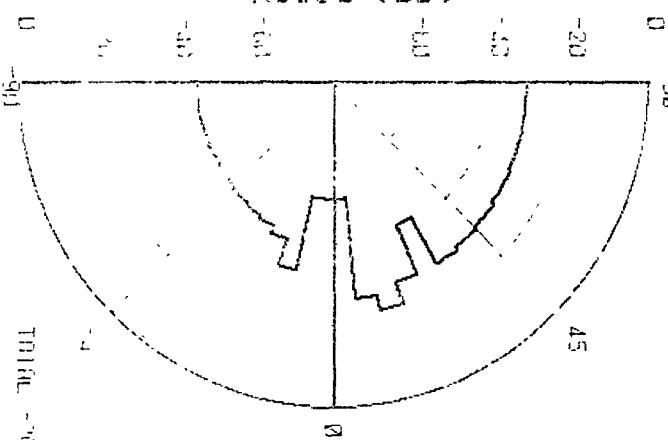
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

FAR 3A SUMMER

S 233 R 1000 F 10

1450 M/S 1500 1550

LRAPP

DB LOSS

90

+

+

+

+

+

+

+

+

-

130

+

+

+

+

+

+

+

-

110

+

+

+

+

+

+

-

-

ARRIVAL ANGLE

20

+

+

+

+

+

+

-

-

0

+

+

+

+

+

+

-

-

0

NOISE (DB)

0

+

-

DEPTH IN METERS

0

+

-

2000

4000

5000

+

-

-40

+

+

+

+

+

+

-

-

0

0

-

-20

+

+

-

-

-

-

-40

+

+

-

-

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-60

+

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-80

+

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-100

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+

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-150

+

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-200

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-250

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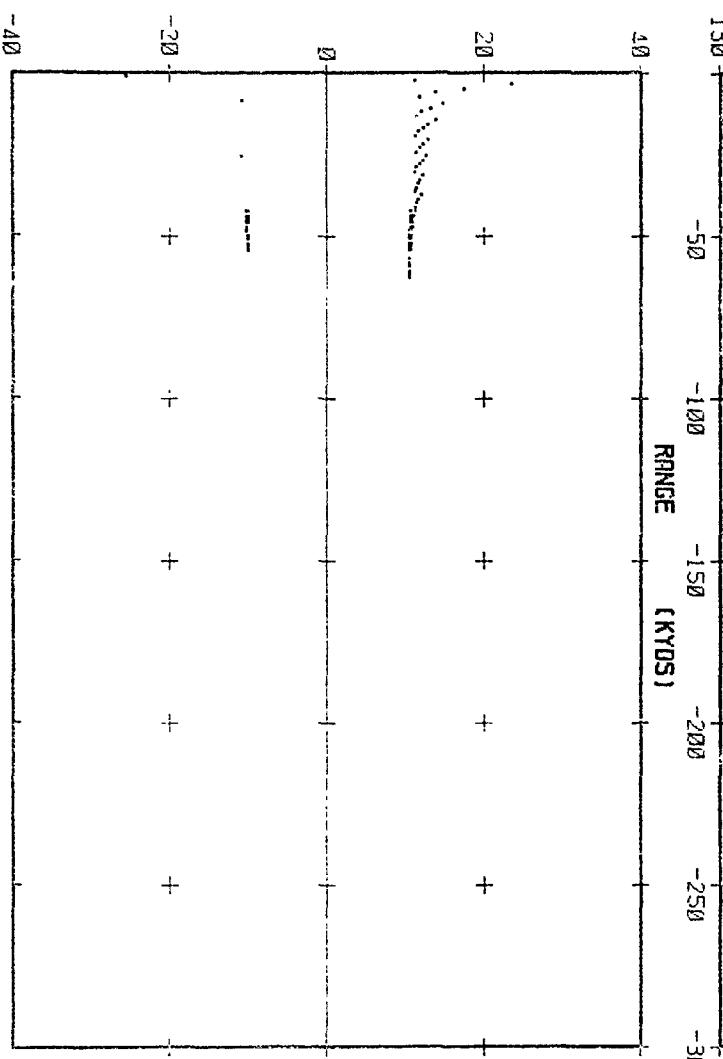
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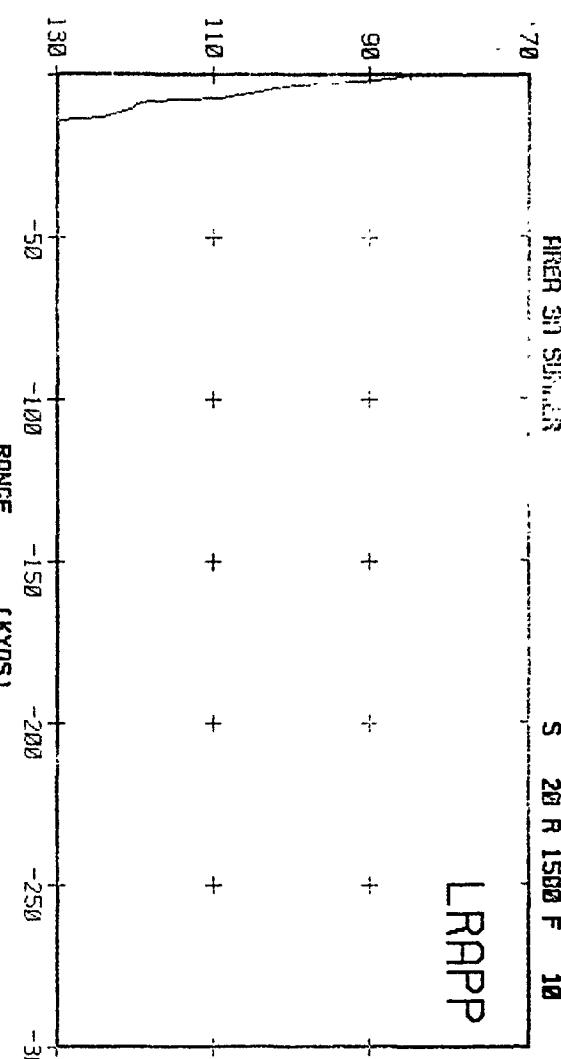
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-15-

ARRIVAL ANGLE

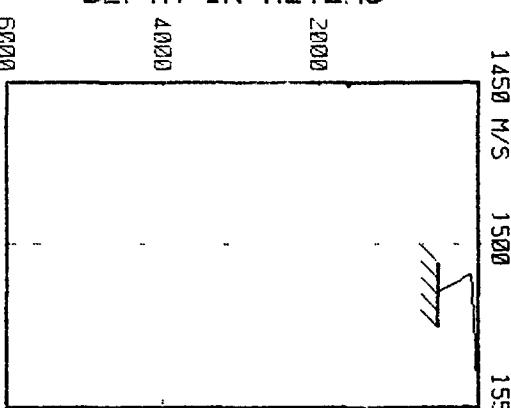


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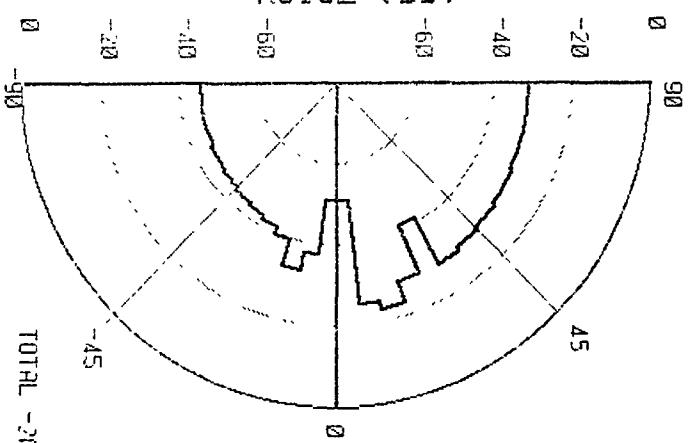


L RAPP

DEPTH IN METERS



NOISE (DB)



TOTAL -20.1 dB

70

AREA 3A SUMMER

S 50 R 1500 F 10

1450 M/S 1500 1550

LRAPP

90

+

+

+

+

+

-

DB LOSS

110

+

+

+

+

+

130 110 90
-50 -100 -150 -200 -250 -300

RANGE (KILOS)

6000 4000 2000

DEPTH IN METERS



ARRIVAL ANGLE

20

+

+

+

+

+

-20

+

+

+

+

+

NOISE (DB)

-50

-40

-30

-20

-10

0

90

45

0

0

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

-280

-300

-320

-340

-360

-380

-400

-420

-440

-460

-480

-500

-520

-540

-560

-580

-600

-620

-640

-660

-680

-700

-720

-740

-760

-780

-800

-820

-840

-860

-880

-900

-920

-940

-960

-980

-1000

-1020

-1040

-1060

-1080

-1100

-1120

-1140

-1160

-1180

-1200

-1220

-1240

-1260

-1280

-1300

-1320

-1340

-1360

-1380

-1400

-1420

-1440

-1460

-1480

-1500

-1520

-1540

-1560

-1580

-1600

-1620

-1640

-1660

-1680

-1700

-1720

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-1860

-1880

-1900

-1920

-1940

-1960

-1980

-2000

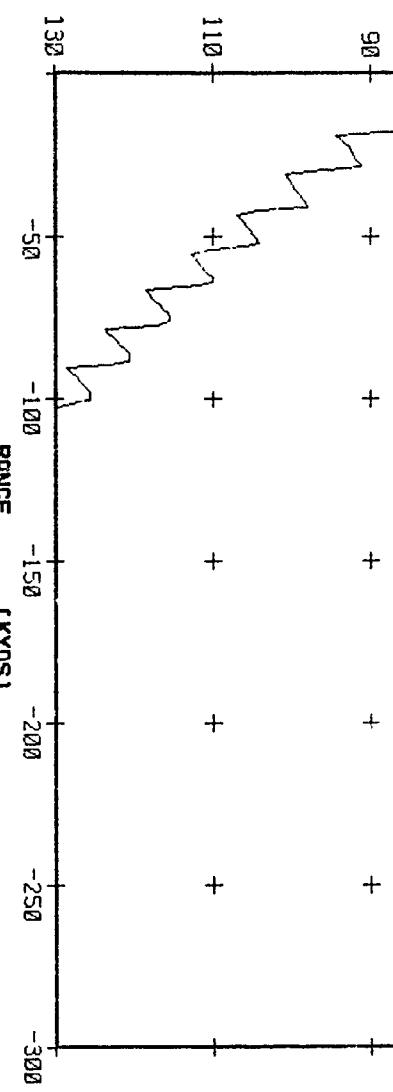
AREA 3A SUMMER

S 233 R 1500 F 10

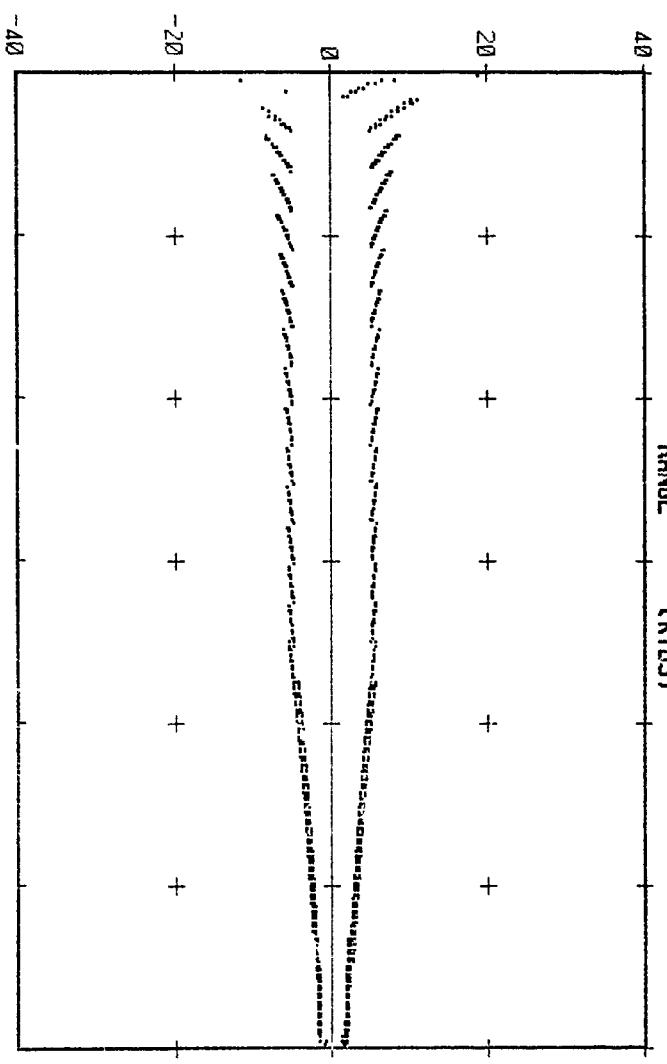
1450 M/S 1500 1550

LRAPP

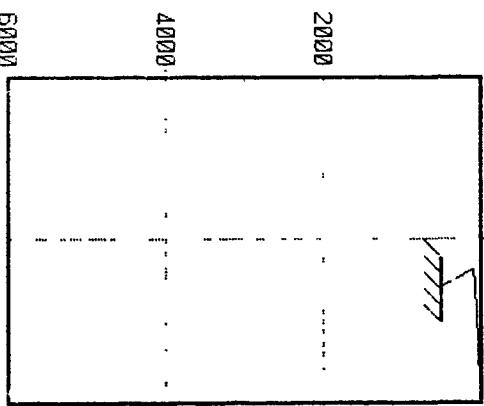
DB LOSS



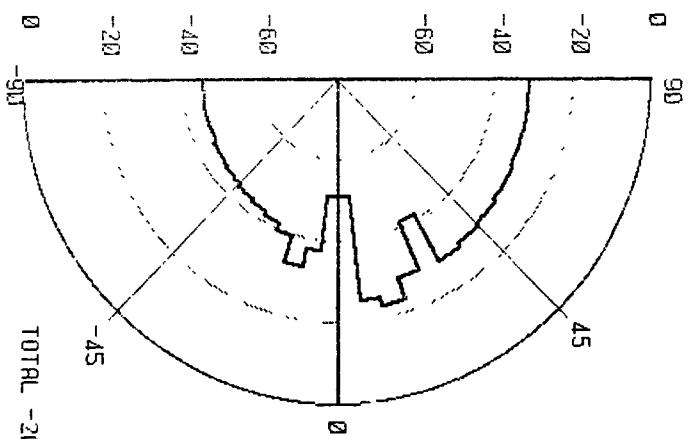
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -20.1 DB

70

AREA 3A SUMMER

S 28 R 1643 F 10

1450

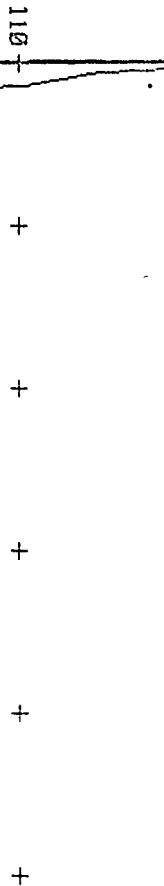
11/5

1500

1550

LRAPP

DB LOSS



DEPTH IN METERS

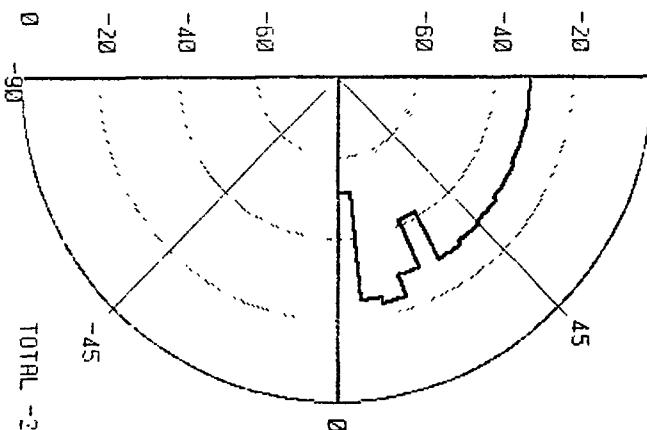
6000
4000
2000
00
90

-20

-40

-60

NOISE (DB)



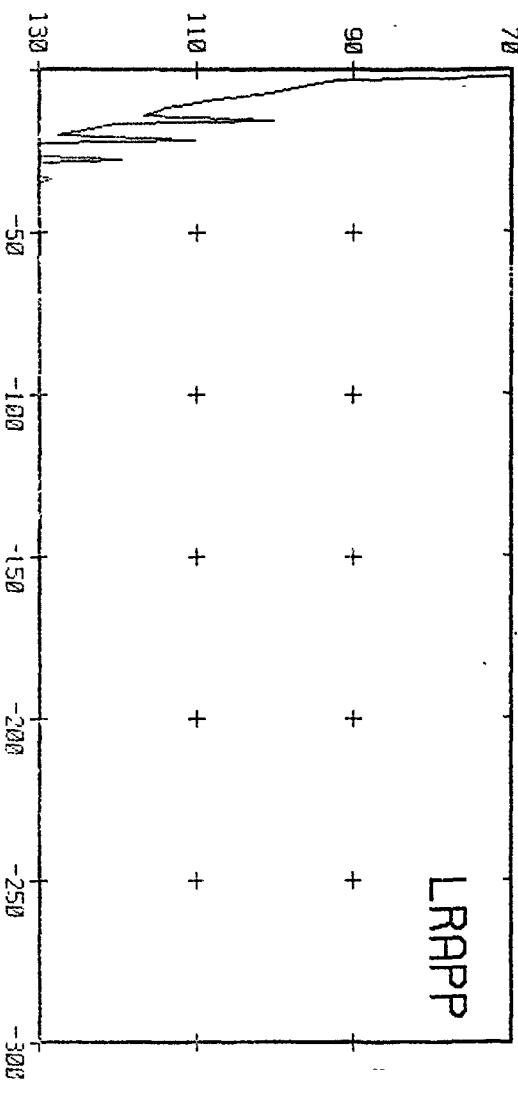
AREA 3A SUMMER

S 50 R 16AB F 10

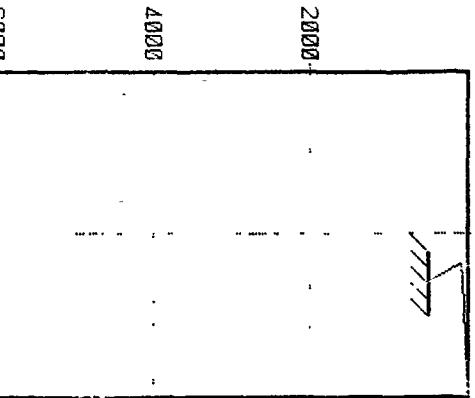
1450 M/S 1500 1550

L RAPP

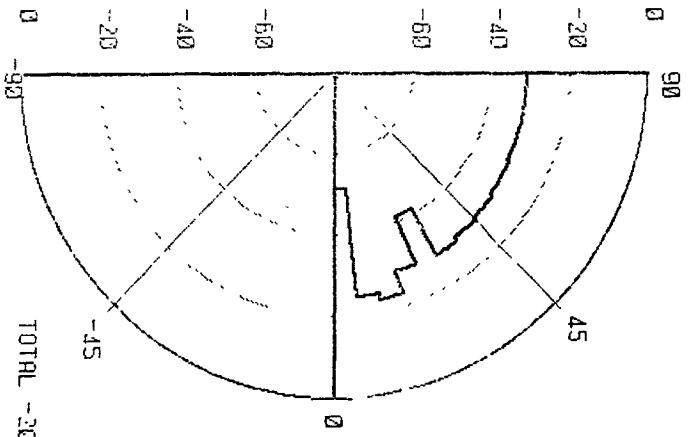
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -20.4 DB

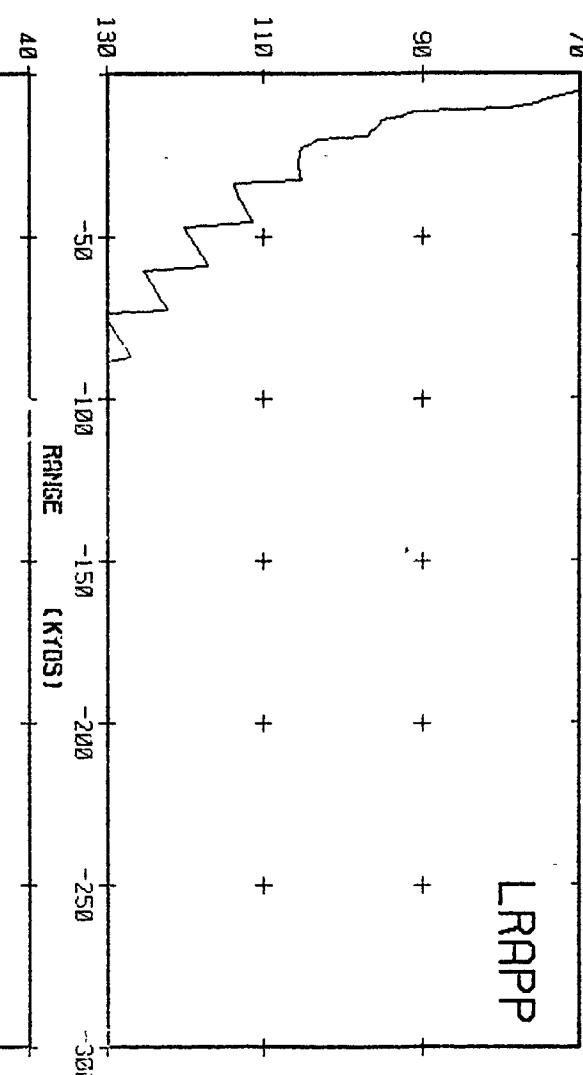
70

AREA 3A SUMMER

S 233 R 1640 F 10

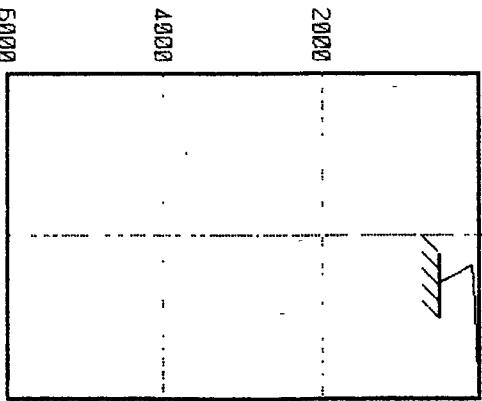
1450 M/S 1500 1550

DB LOSS

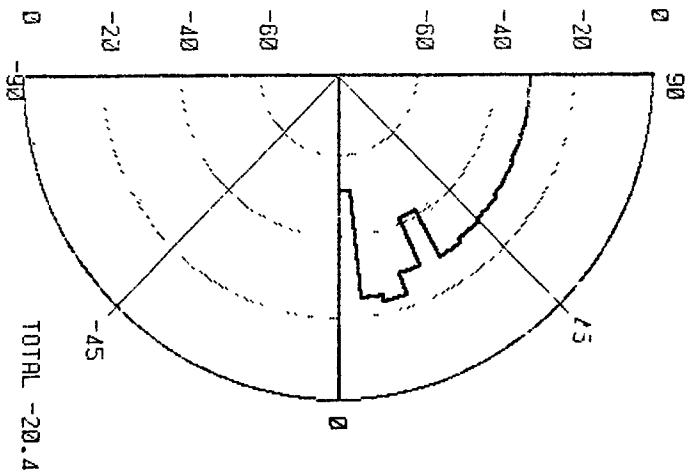


LRAPP

DEPTH IN METERS



NOISE (DB)



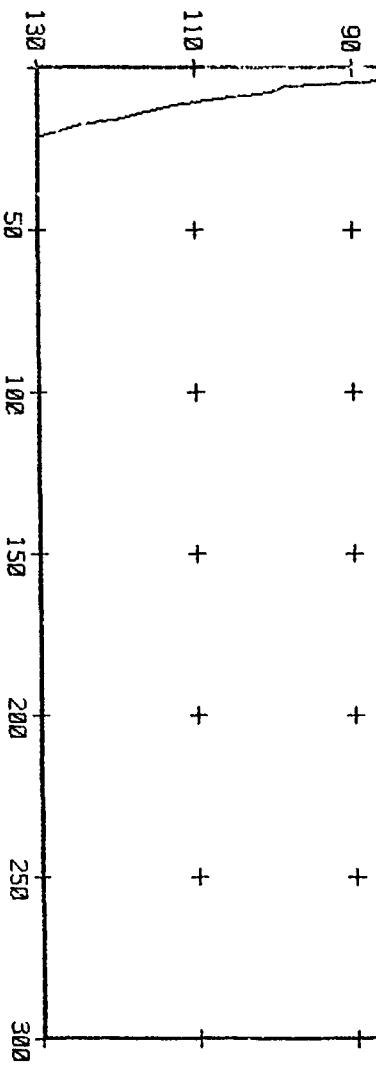
AREA 3A SUMMER

S 20 R 60 F 50

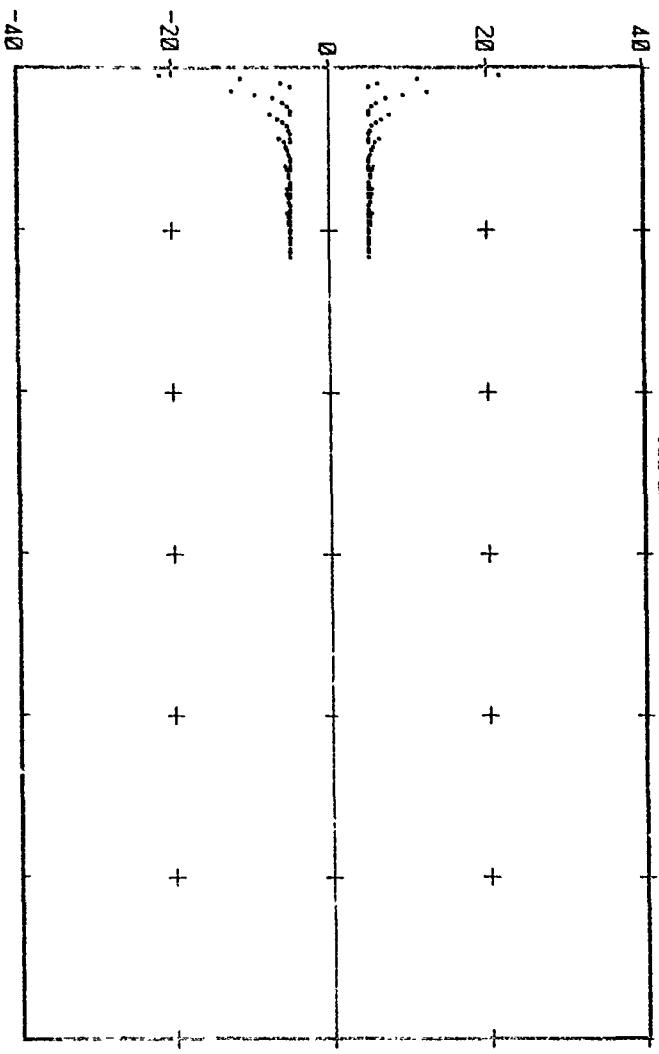
1450 M/S 1500 1550

LRAPP

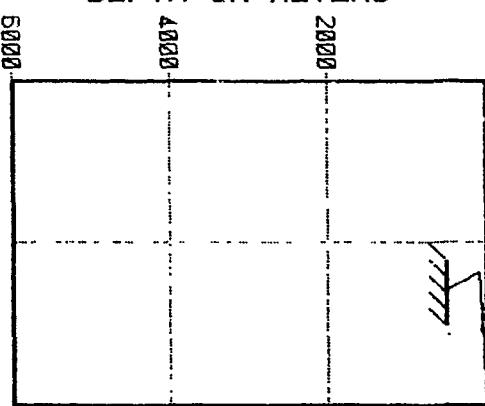
DB LOSS



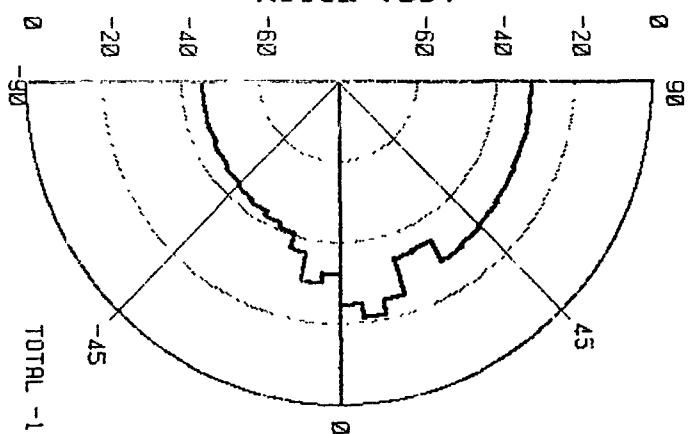
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -18.7 DB

70

AREA 3A SUMMER

S 50 R 60 F 50

1450 M/S 1500 1550

90

DB LOSS

2000

LRAPP

DB LOSS

110

90 + + + + + + + + + +

130 110 90

100 80 60 40 20 0

-100 -150 -200 -250 -300

RANGE (KMS)

6000

4000

2000

0

DEPTH IN METERS

ARRIVAL ANGLE

20

0

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

-280

-300

-320

-340

-360

NOISE (DB)

-60

-40

-20

0

0

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

-280

-300

-320

-340

-360

-380

-400

-420

-440

-460

-480

-500

-520

-540

-560

-580

-600

-620

-640

-660

-680

-700

-720

-740

-760

-780

-800

-820

-840

-860

-880

-900

-920

-940

-960

-980

-1000

-1020

-1040

-1060

-1080

-1100

-1120

-1140

-1160

-1180

-1200

-1220

-1240

-1260

-1280

-1300

-1320

-1340

-1360

-1380

-1400

-1420

-1440

-1460

-1480

-1500

-1520

-1540

-1560

-1580

-1600

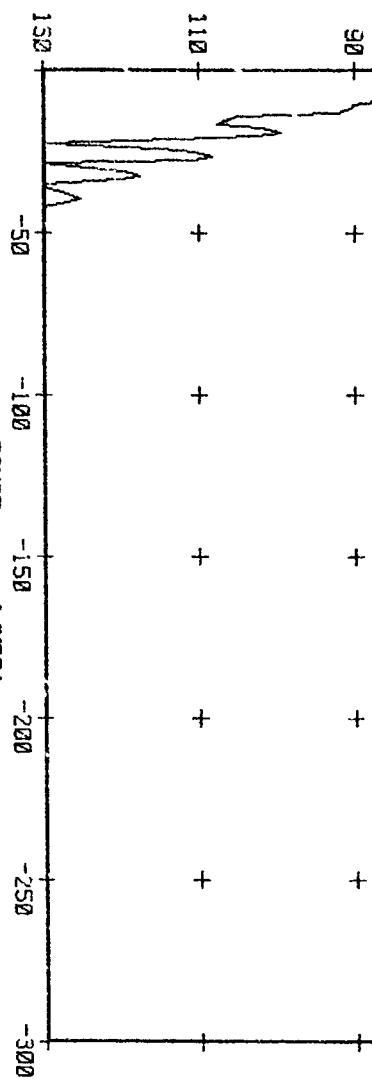
AREA 3A SUMMER

S 233 R 60 F 50

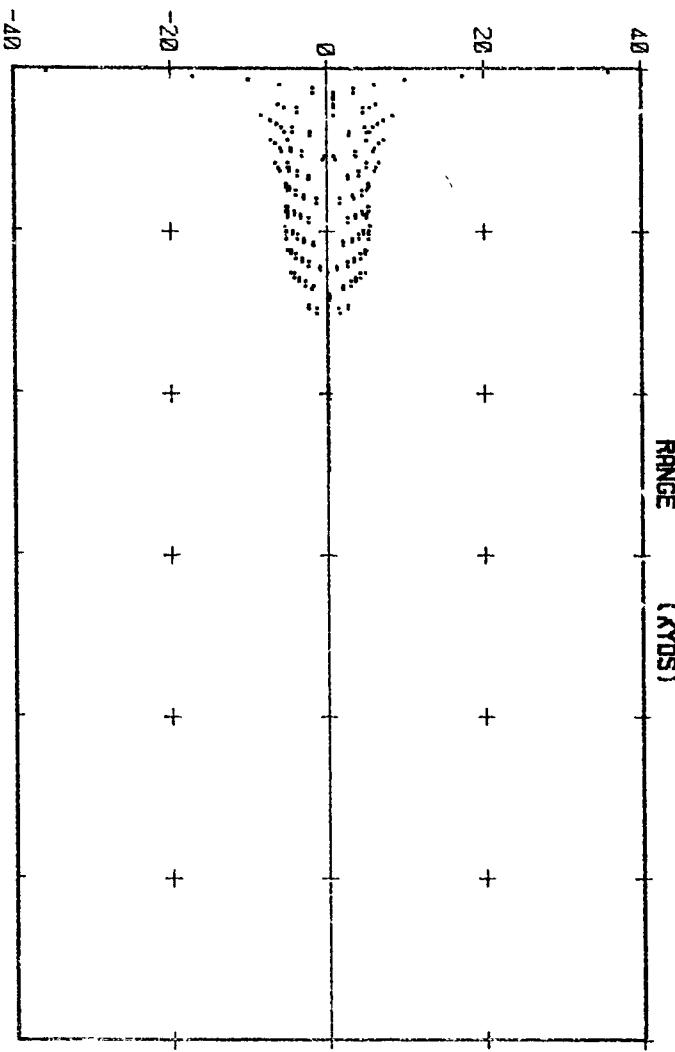
1450 M/S 1500 1550

L RAPP

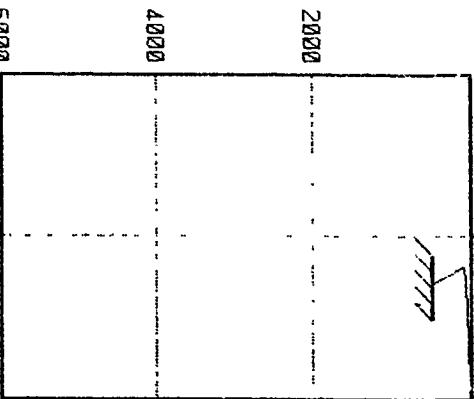
DB LOSS



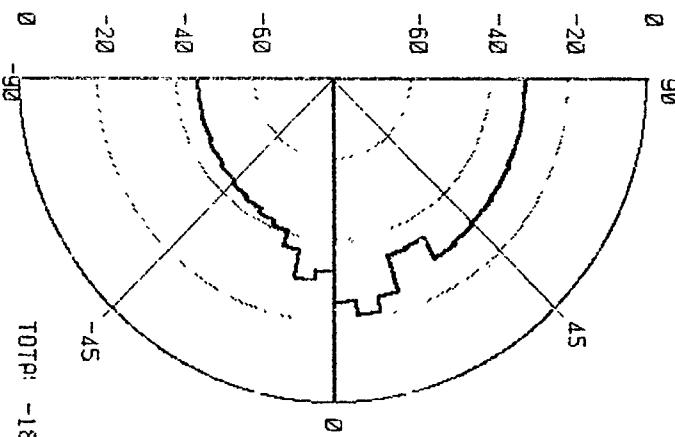
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTP: -18.7 DB

70

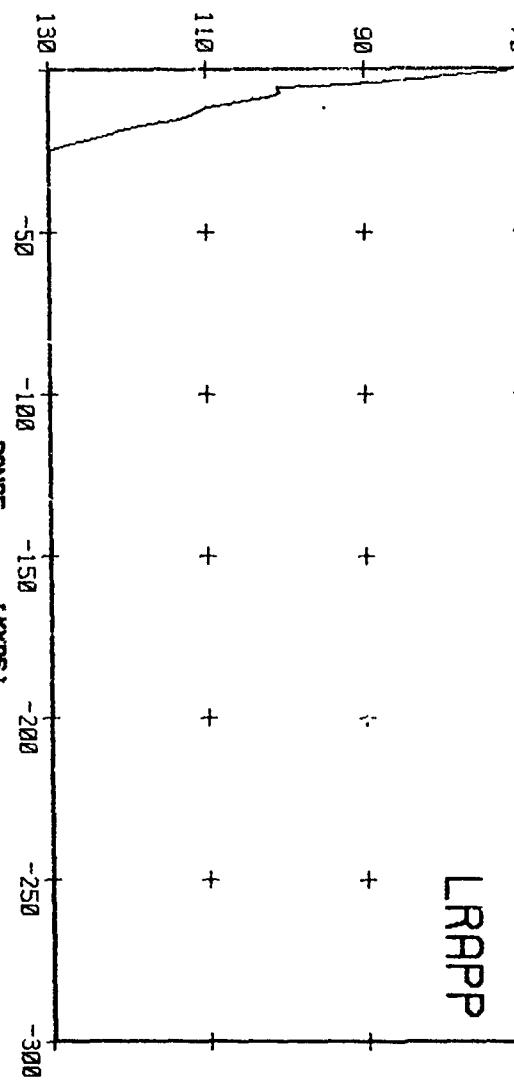
AREA 3A SUMMER

S 28 R 133 F 50

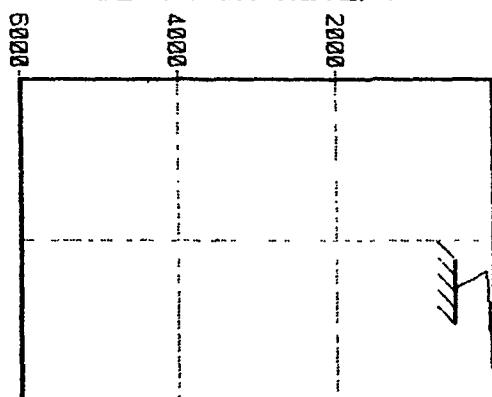
1450 M/S 1500 1550

LRAPP

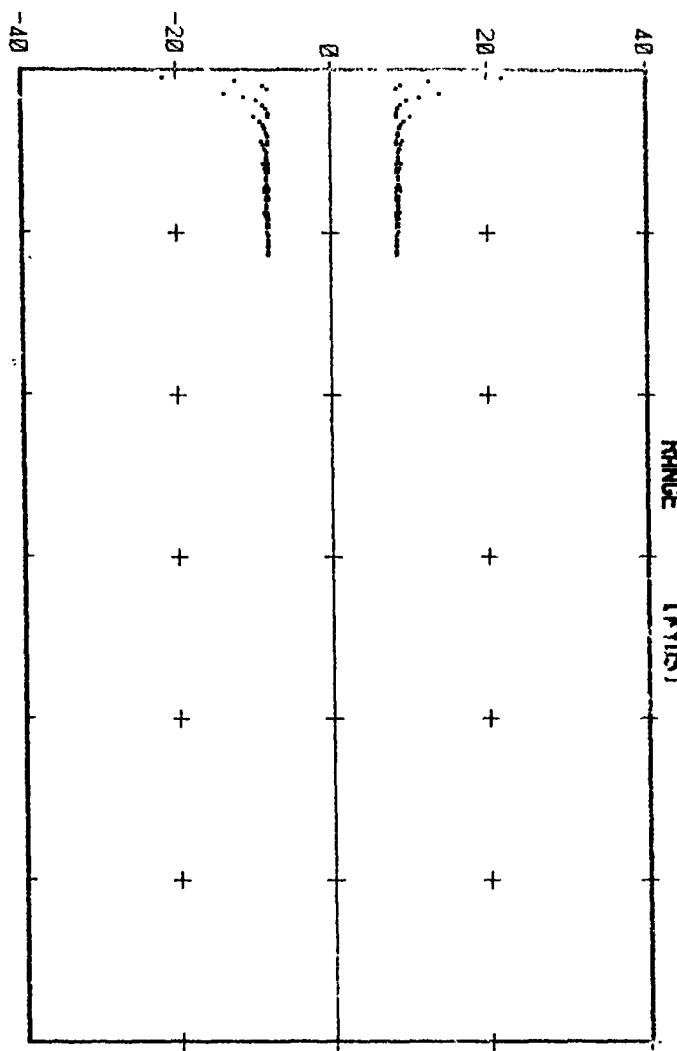
DB LOSS



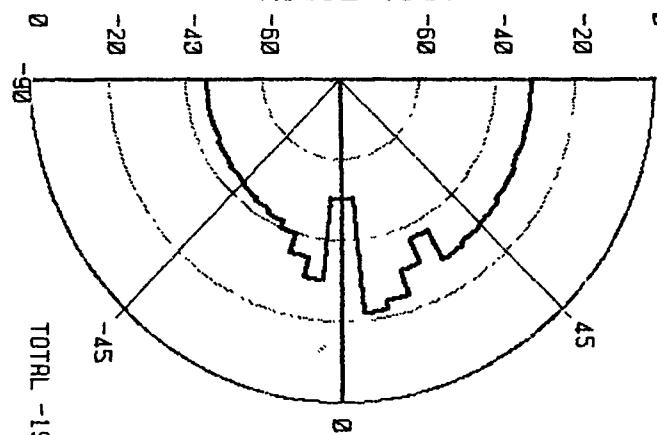
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -19.5 DB

70

AREA 3R SUMMER

S 50 R 133 F 50

1450 M/S 1500 1550

LRAPP

DB LOSS

90

+ + + + + + +

110

+ + + + + + +

40

130 -50 -100 -150 -200 -250 -300

RANGE (KYDS)

0

6000

2000

DEPTH IN METERS



ARRIVAL ANGLE

20

+ + + + + + +

0

+ + + + + + +

-20

+ + + + + + +

-40

+ + + + + + +

NOISE (DB)

0

90

-20

-40

-60

-80

-100

-120

-140

TOTAL -19.5 DB

70

AREA 3R SUMMER

S 233 R 193 F 50

1450 M/S 1500 1550

LRAPP

DB LOSS

90

+

+

+

+

+

+

+

+

130
110
90
70
50
-100
-150
-200
-250
-300

RANGE

(KROS)

DEPTH IN METERS

2000

4000

6000

8000

10000

12000

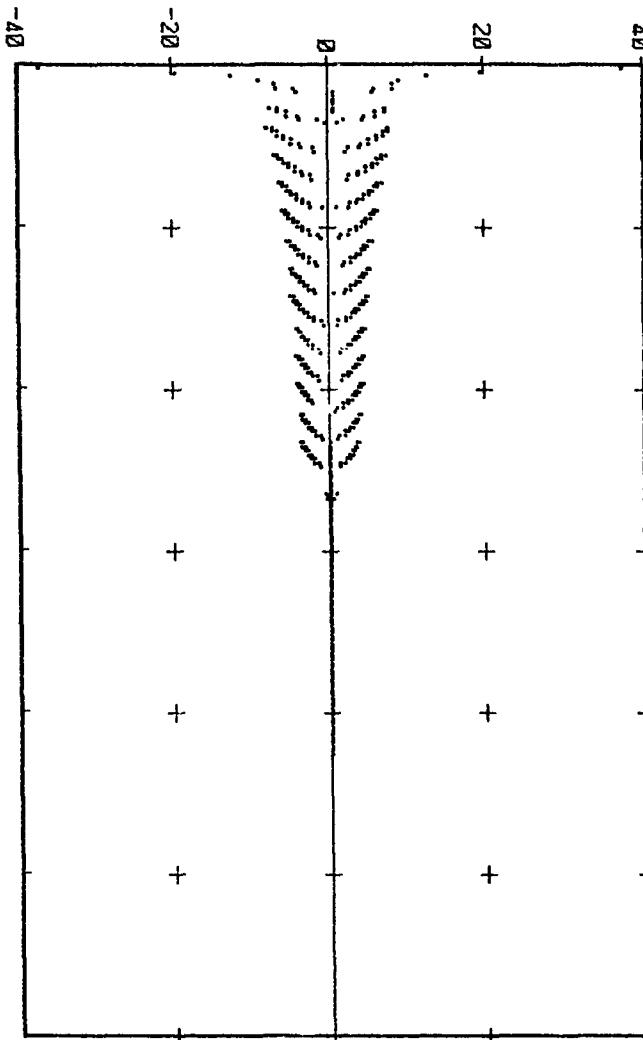
14000

16000

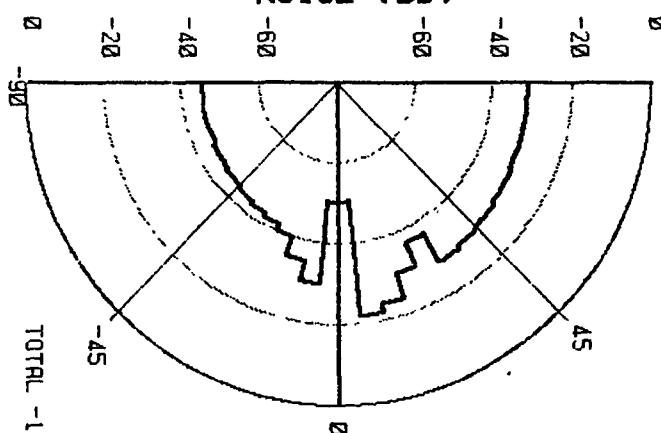
18000

20000

ARRIVAL ANGLE



NOISE (DB)



ARR 3A SUMMER

S 20 R 262 F 50

1450 M/S 1500 1550

LRAFP

DB LOSS

90

+

+

+

+

+

+

130
110
90
70
50
30
10

-100 -150 -200 -250 -300

RANGE

(KMS)

DEPTH IN METERS

2000

4000

6000

ARRIVAL ANGLE

20
10
0
-10
-20
-30
-40

+

+

+

+

+

+

+

+

+

+

+

NOISE (DB)

0 90

-20

-40

-60

-80

-100

-120

-140

-160

TOTAL

-20.3

DB

70

AREA 3A SUMMER

S 58 R 262 F 50

1450 M/S 1500 1550

DB LOSS

90

+

+

+

+

+

+

40

130

-

50

-

100

-

-150

-

-200

-

-250

-

-300

-

ARRIVAL ANGLE

20

+

+

+

+

+

+

-

-

-

-

-

-40

-

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L.RAPP

DEPTH IN METERS

2000

4000

5000

-

-

90

+

+

+

+

+

+

-

-

-

-

-

-

NOISE (DB)

0

-20

-40

-60

-

-

0

-20

-40

-60

-

-

90

45

0

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70

AKER 3R SUMMER

S 233 R 262 F 5A

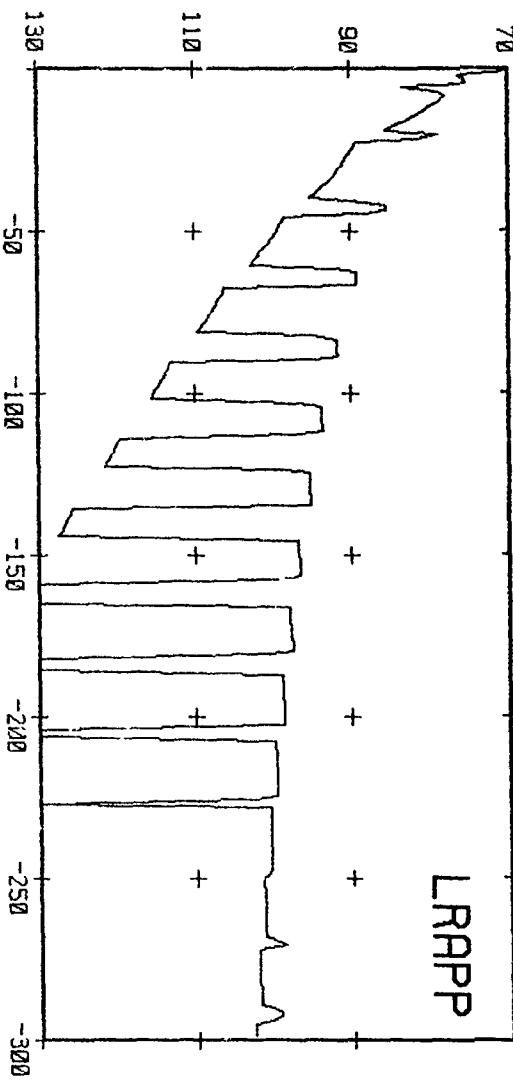
1450 M/S

1500

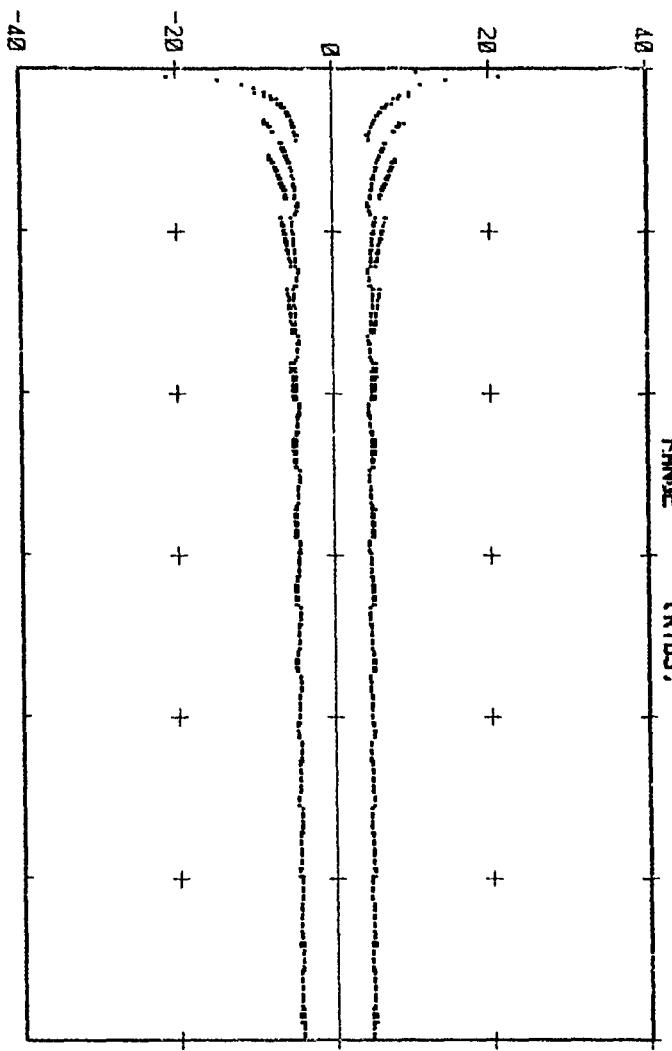
1550

LRAPP

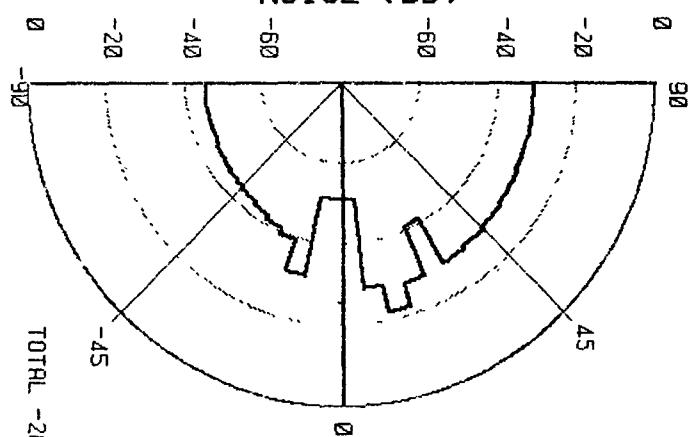
DB LOSS



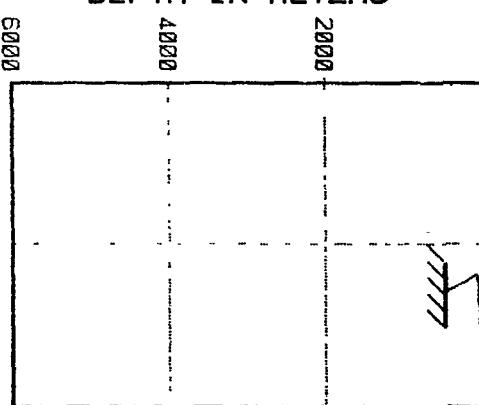
ARRIVAL ANGLE



NOISE (DB)



DEPTH IN METERS



70

AREA 3A SUMMER

S 20 R 300 F 50

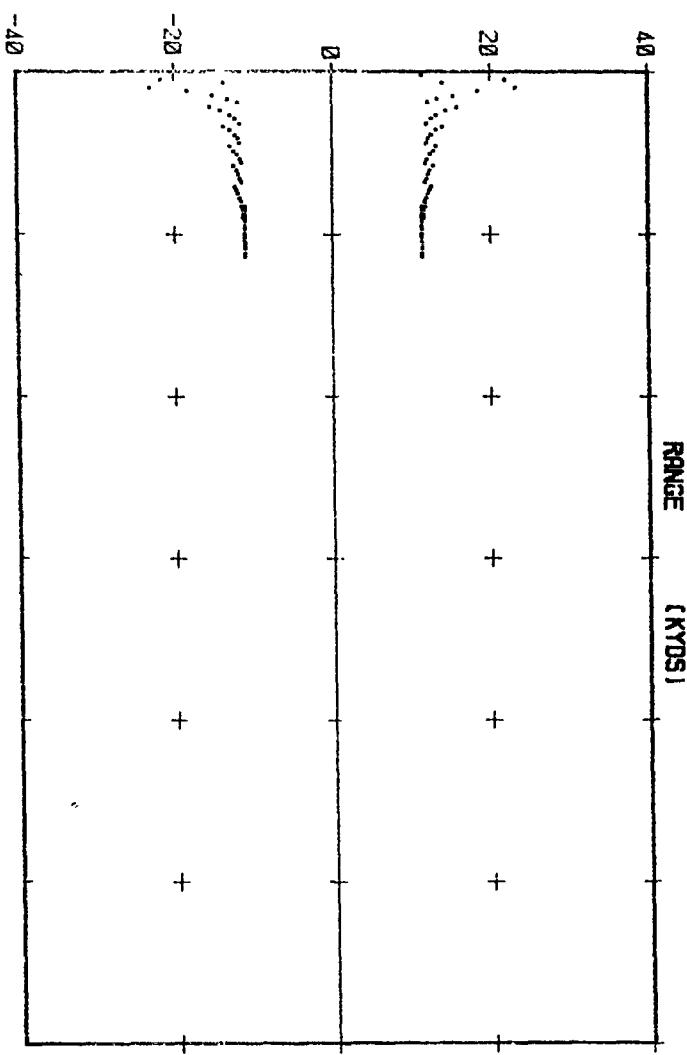
1450 M/S 1500 1550

LRAPP

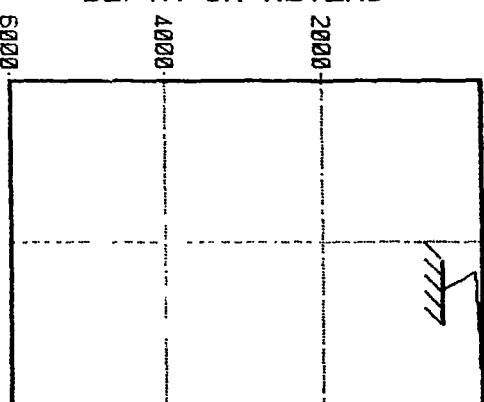
DB LOSS



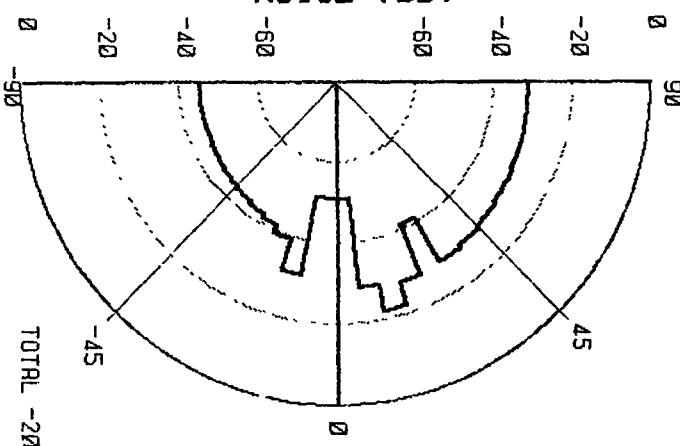
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -20.2 DB

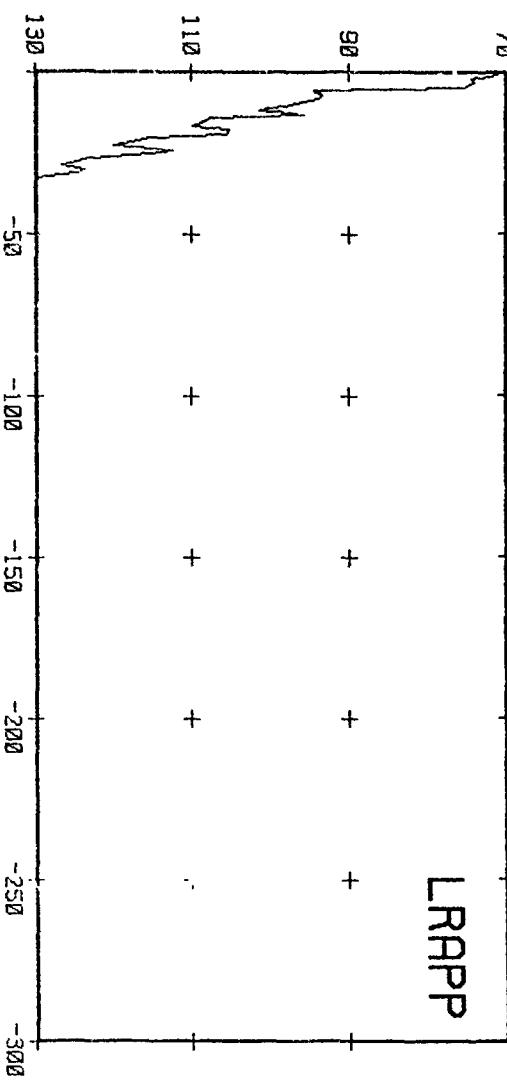
AREA 3A SUMMER

S 50 R 300 F 50

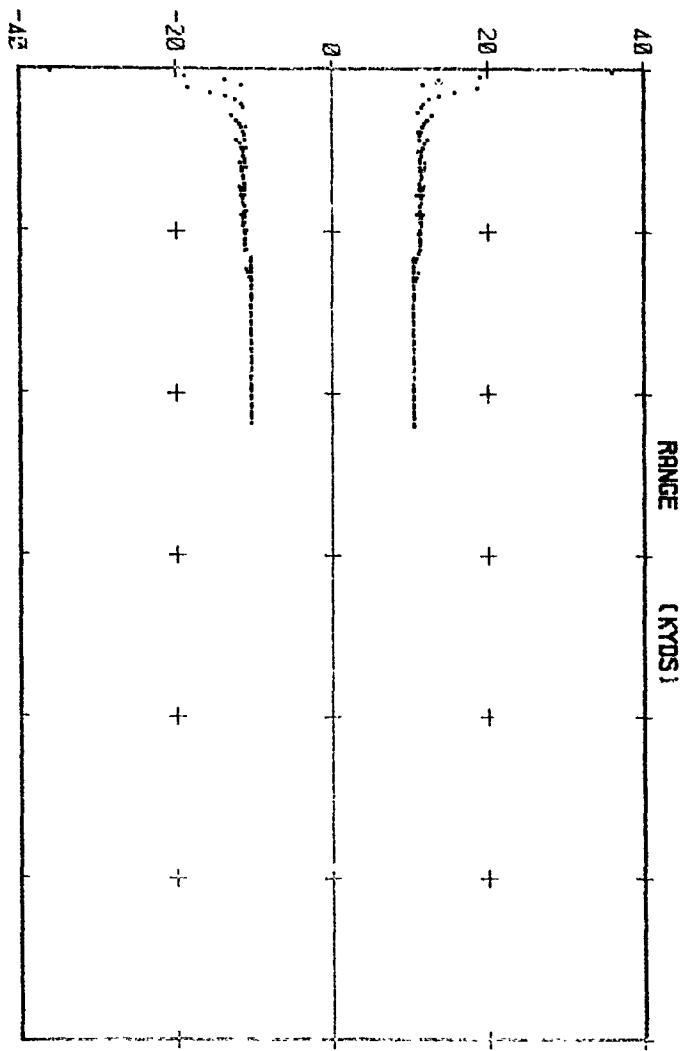
1450 M/S 1500 1550

LRAAPP

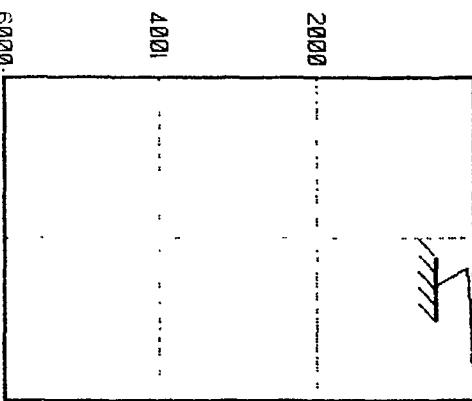
DB LOSS



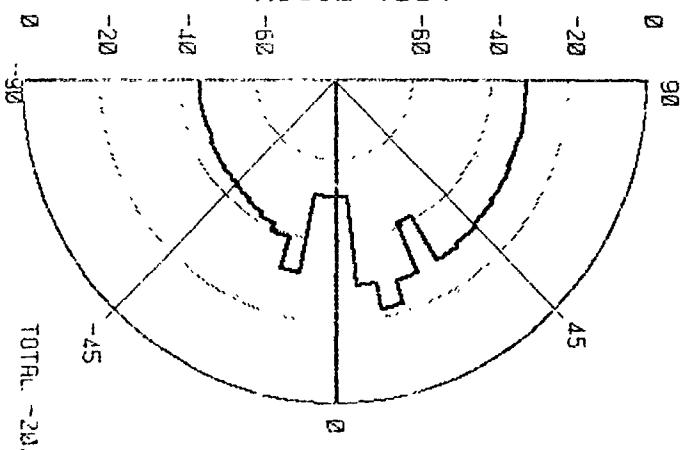
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL - 24.2 DB

70

RER 39 SUMMER

S 293 R 300 F 50

1450 M/S 1500 1550

90

L RAPP

DB LOSS

130
40
-50
-100
-150
-200
-250
-300

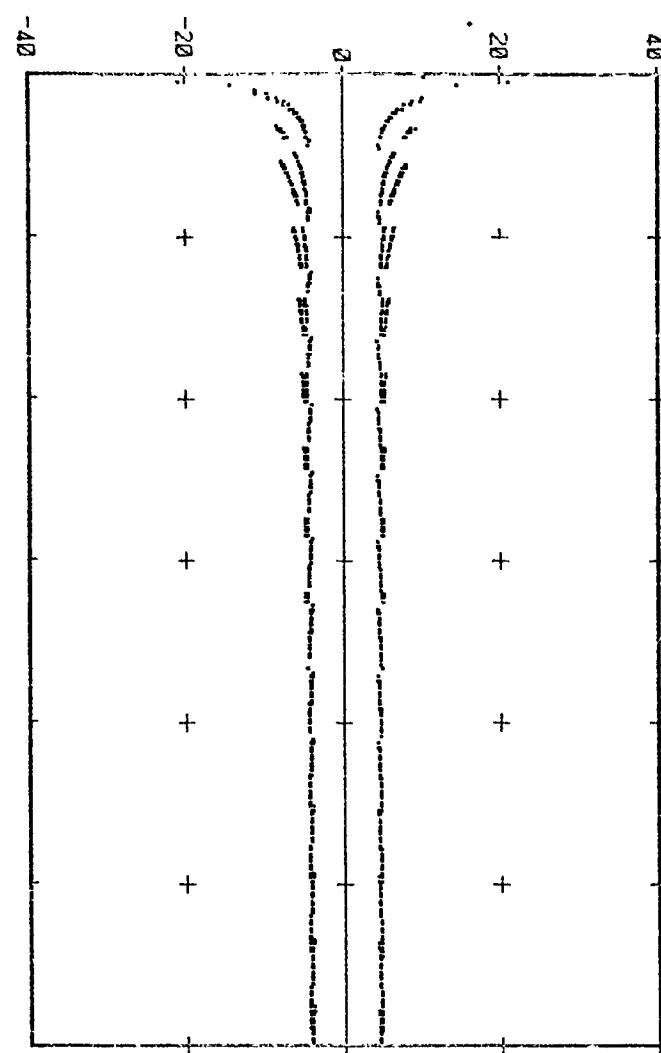
RANGE (KMS)

DEPTH IN METERS

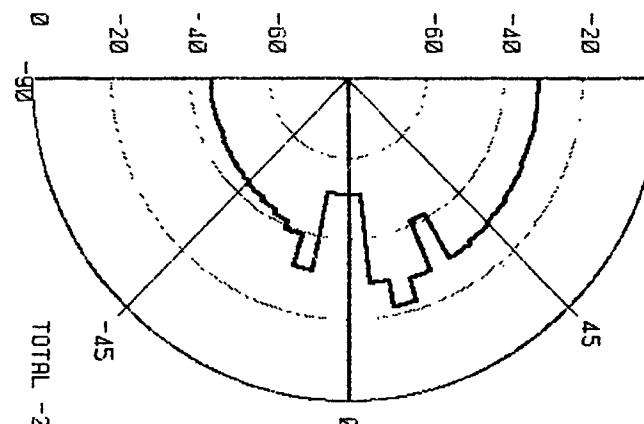
6000
4000
2000

90

ARRIVAL ANGLE



NOISE (DB)



TOTAL -20.2 DB

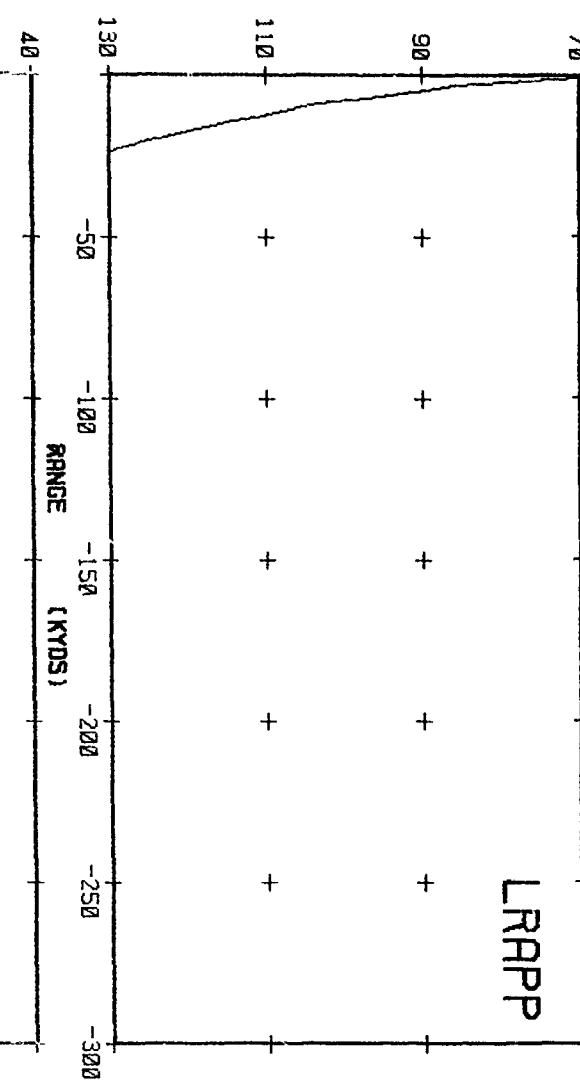
PAPER 3A SUMMER

S 28 R 1000 F 50

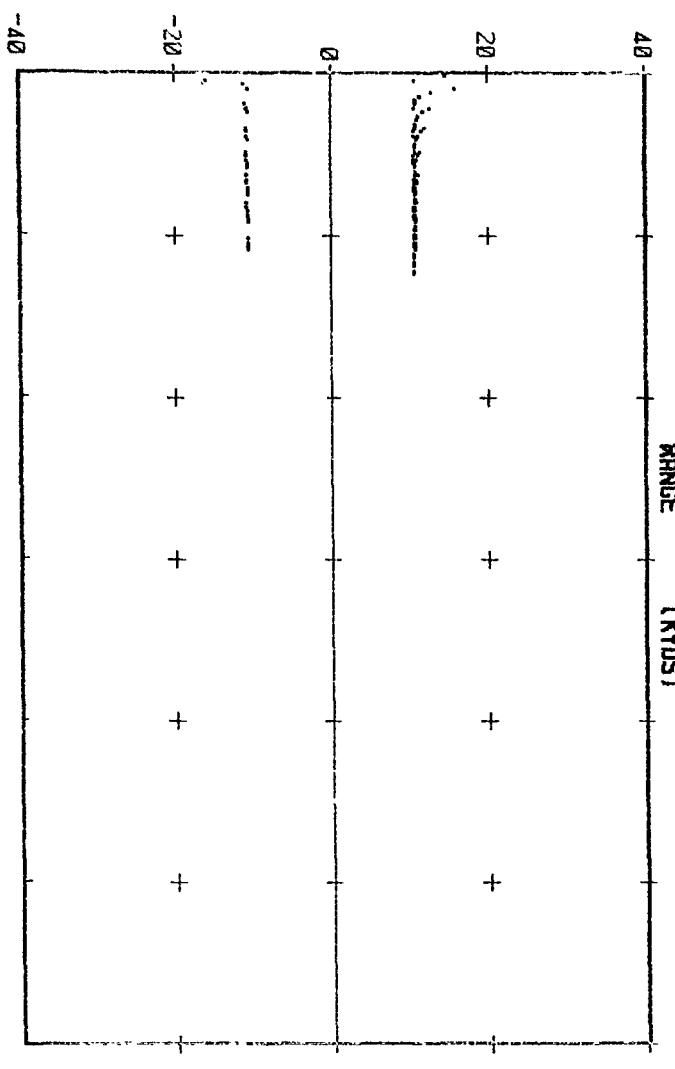
1450 M/S 1500 1550

LRAPP

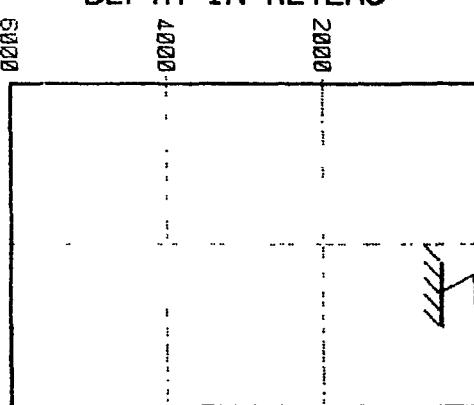
DB LOSS



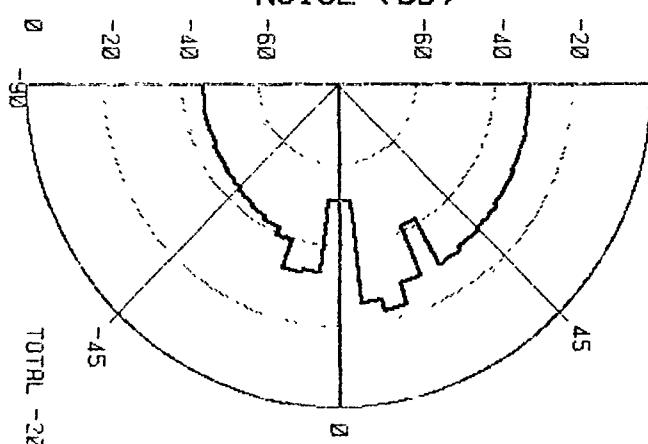
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -20.0 dB

70

PREH -> SUMMER

S 50 R 1000 F 50

1450 M/S 1500

1550

LRAPP

DB LOSS

90

+

+

+

+

+

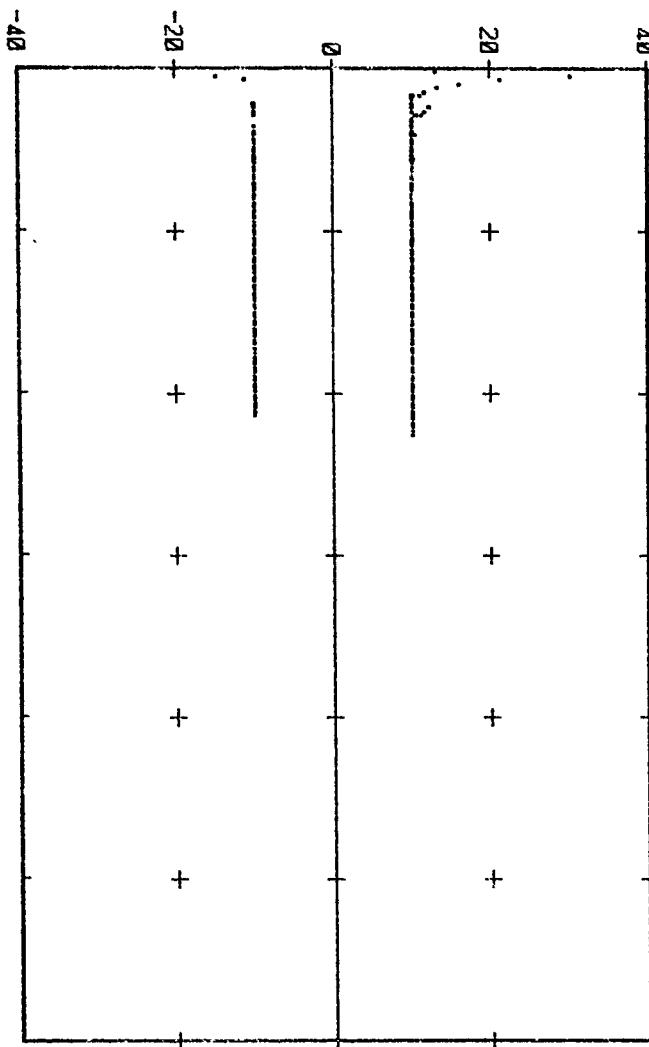
+

130
110
90
70
50
30
10
0

-100 -150 -200 -250 -300

RANGE (KILOS)

ARRIVAL ANGLE



DEPTH IN METERS

6000

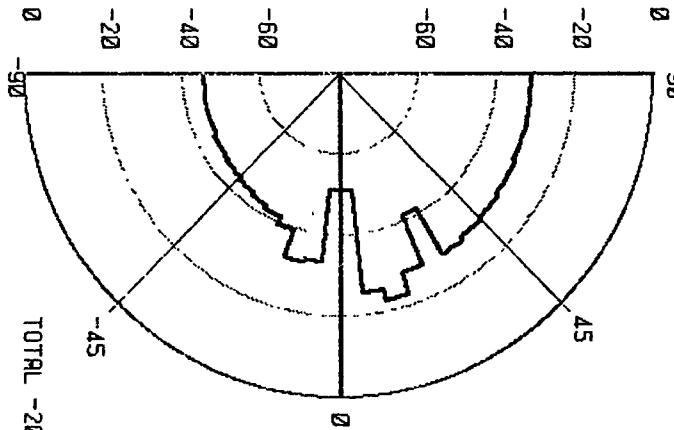
4000

2000

0



NOISE (DB)

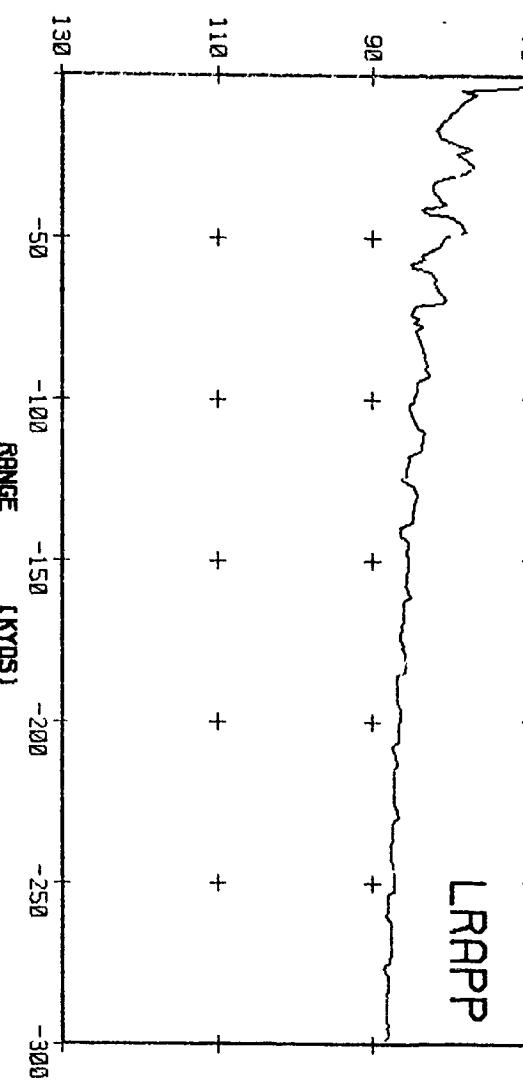


AER 3R SUMMER

S 233 R 1000 F 50

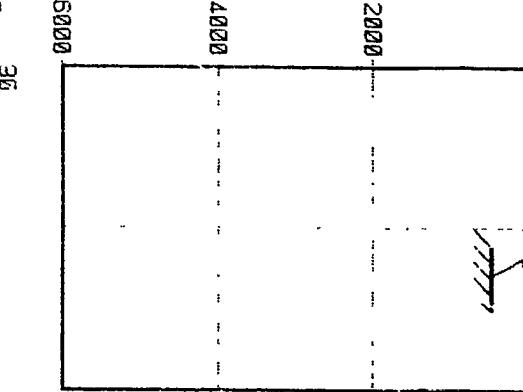
1450 M/S 150W 15JU

DB LOSS

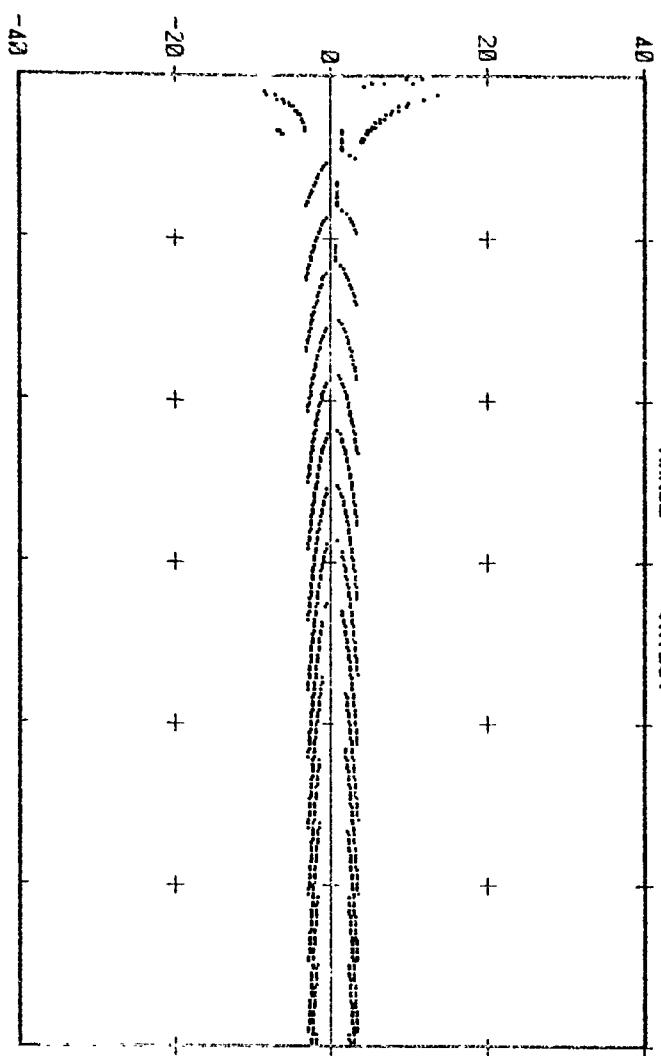


LRAPP

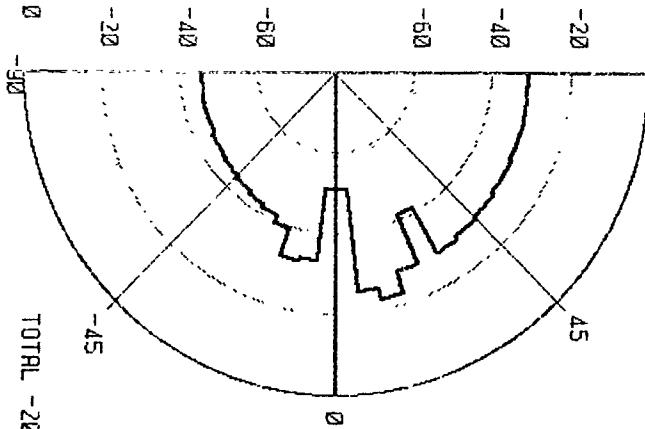
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



70

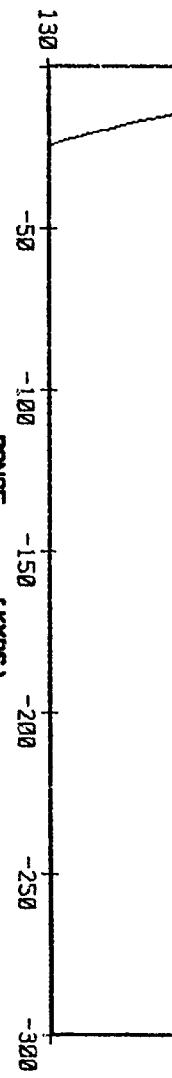
AREA 39 SUMMER

S 28 R 1500 F 50

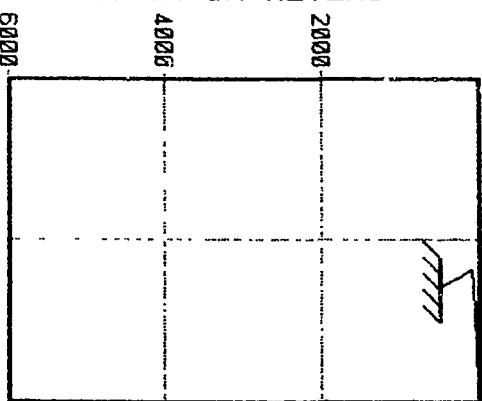
1450 M/S 1500 1500

LRAPP

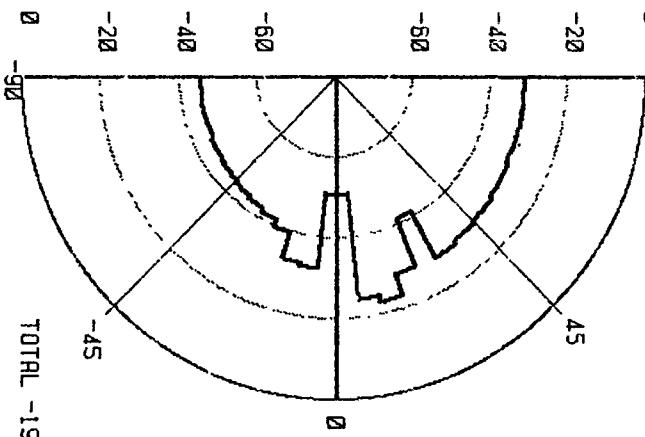
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -19.9 78

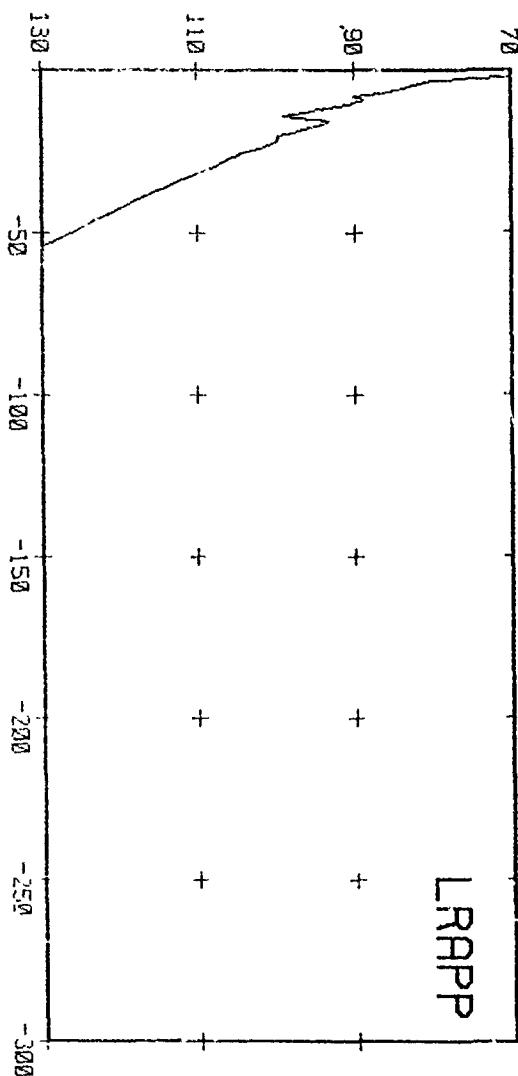
AREA 3A SUMMER

S 50 R 1500 F 50

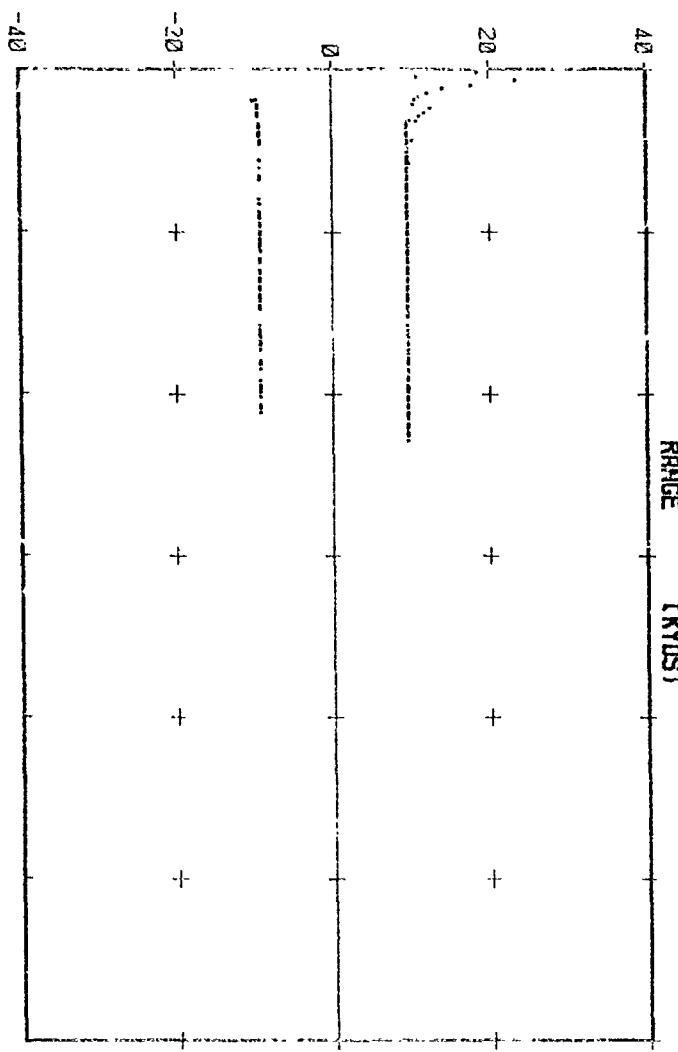
1452 M/S 1500 1550

L.R.A.P.P.

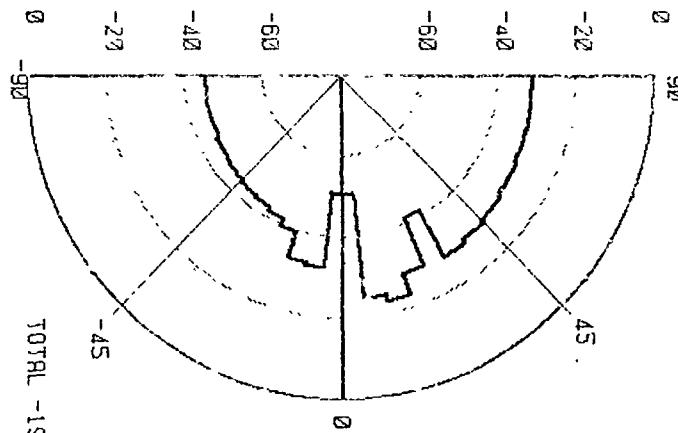
DB LOSS



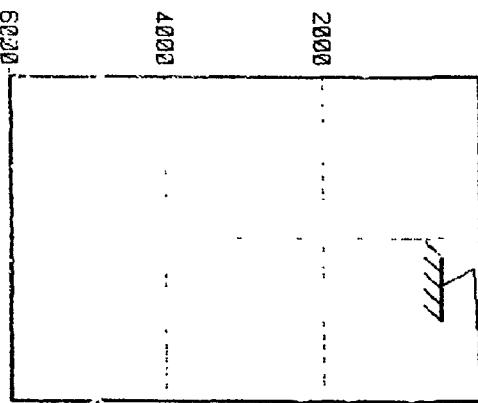
ARRIVAL ANGLE



NOISE (DB)



DEPTH IN METERS



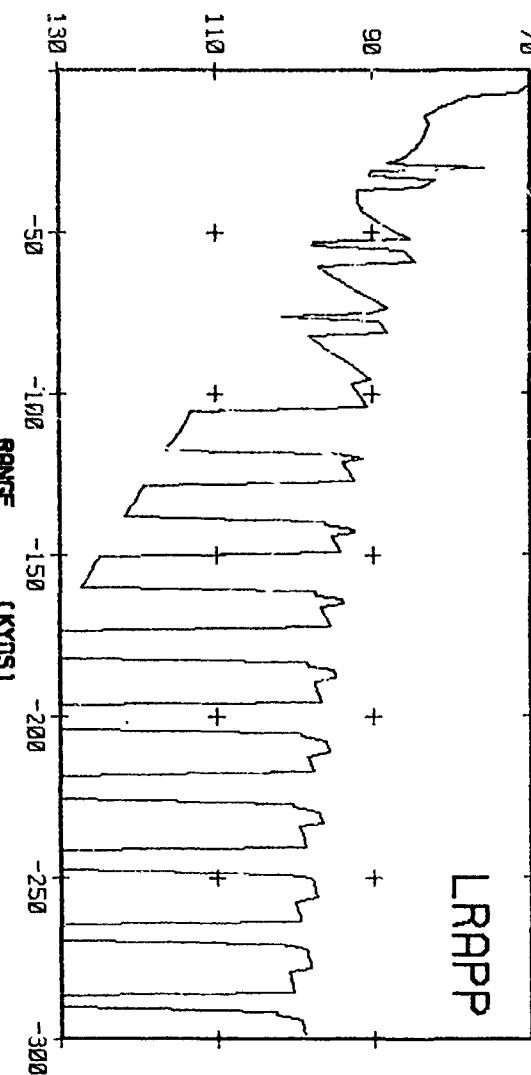
TOTAL -19.9 DE

AREA 3A SUMMER

S 233 R 1500 F 50

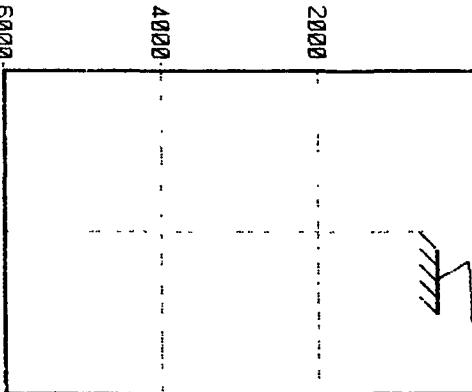
1450 M/S 1500 1550

DB LOSS

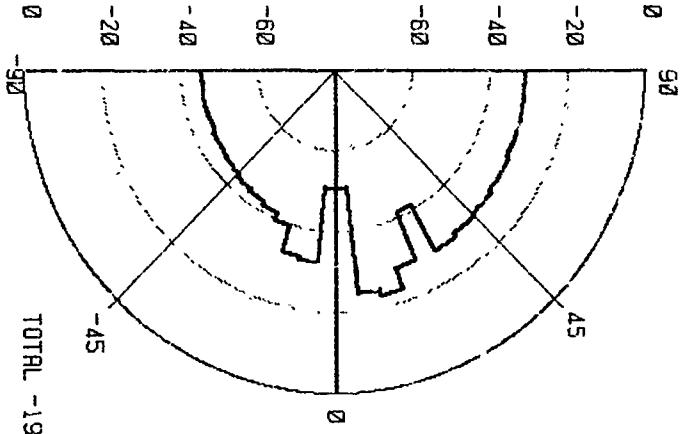


L RAPP

DEPTH IN METERS



NOISE (DB)

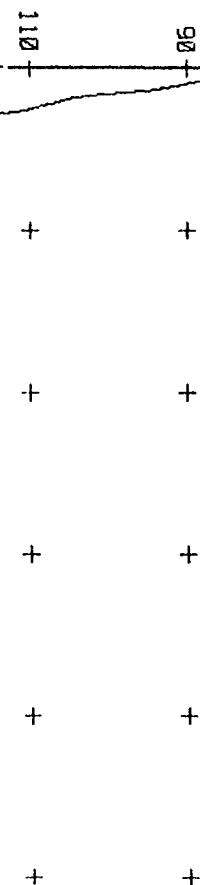


TOTAL -19.9 DB

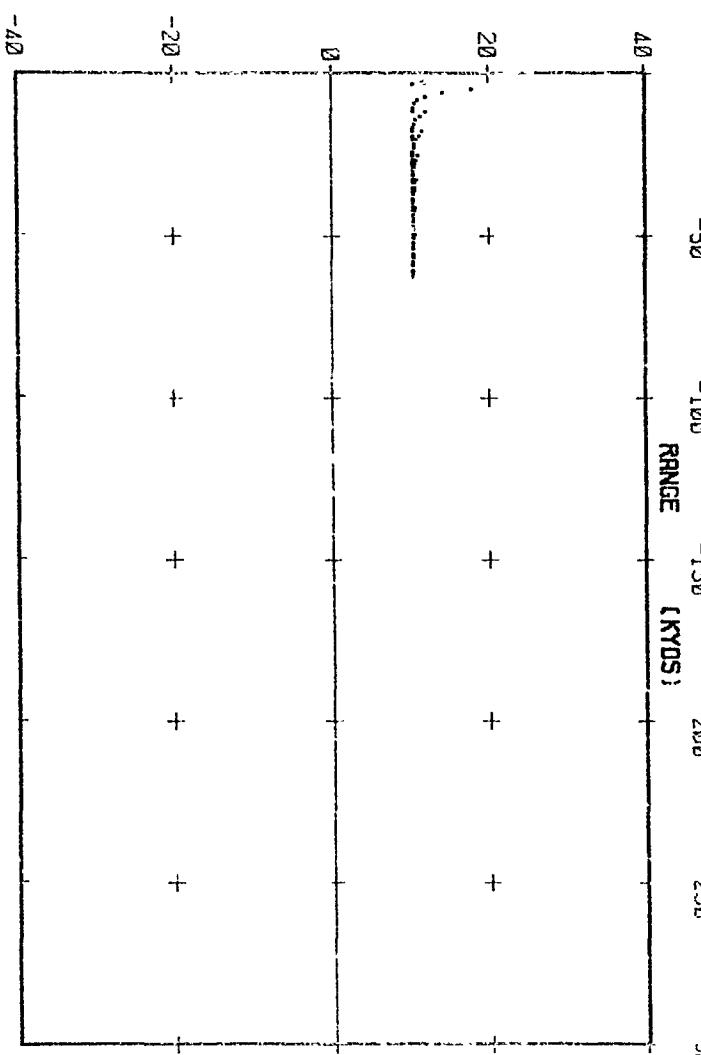
AIRER 3A SUMMER S 20 R 1640 F 50 1450 M/S 1500 1550

LRAPP

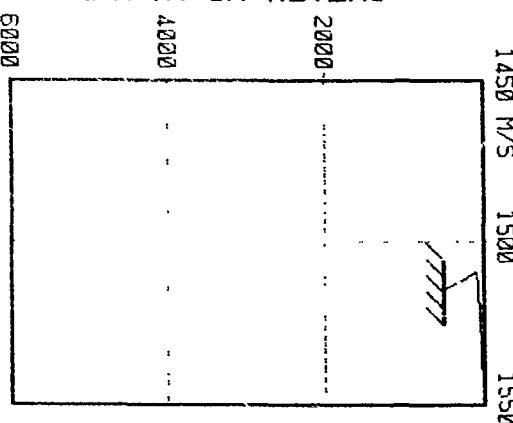
DB LOSS



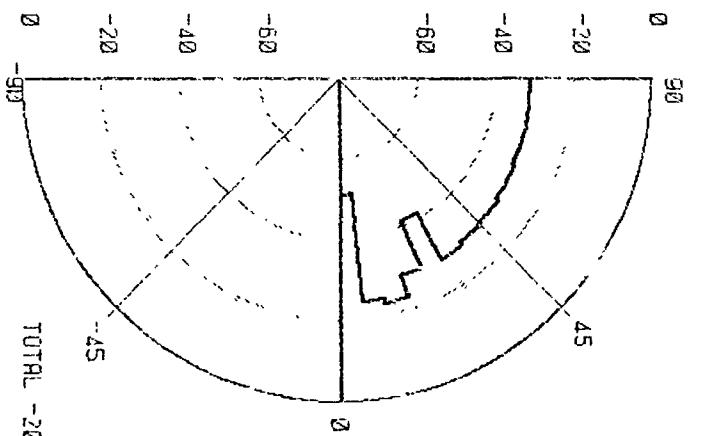
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -20.3 DB

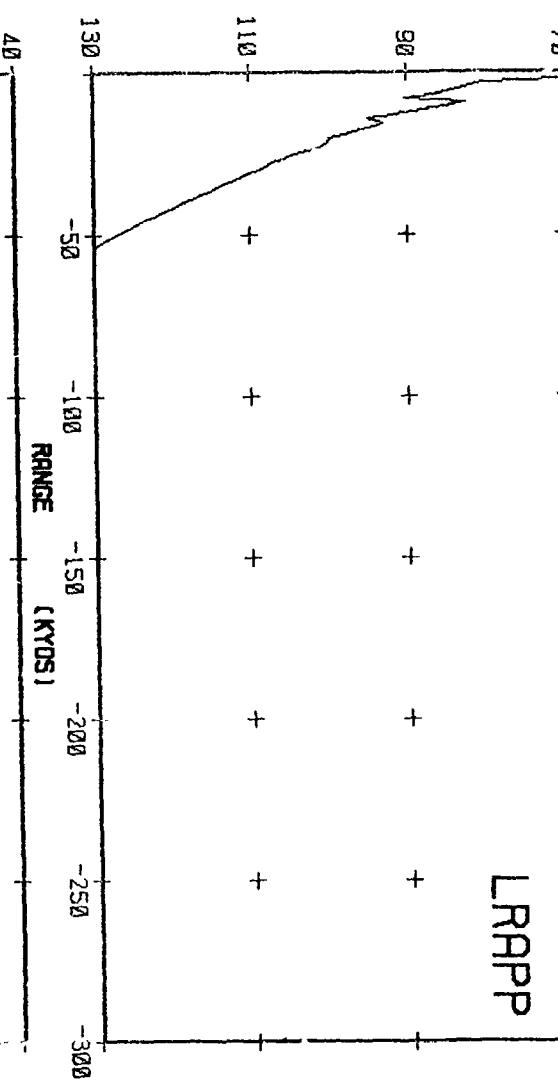
AREA 3A SUMMER

S 50 R 1640 F 50

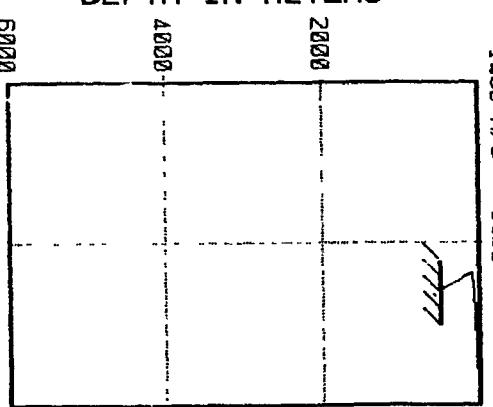
L RAPP

1450 M/S 1500 1550

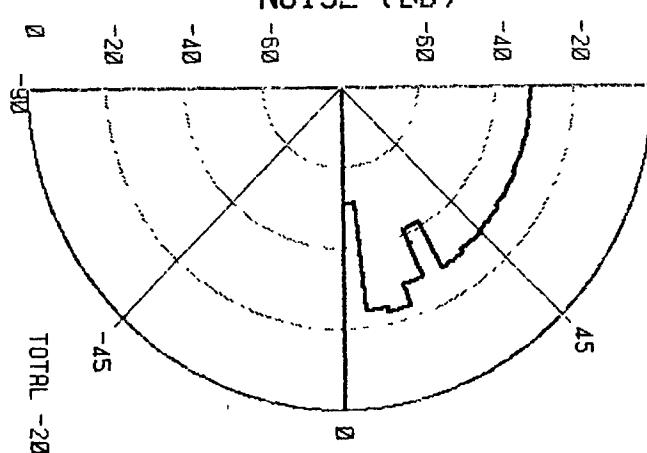
DB LOSS



DEPTH IN METERS



NOISE (DB)



ARER 36 SUMMER

S 233 R 1640 F 50

1450 M/S 1500 1550

L RAPP

DB LOSS

90 + + + + +

110 + + + + +

130
40
-50
-100
-150
-200
-250
-300

RANGE

(KIOS)

DEPTH IN METERS

2000

4000

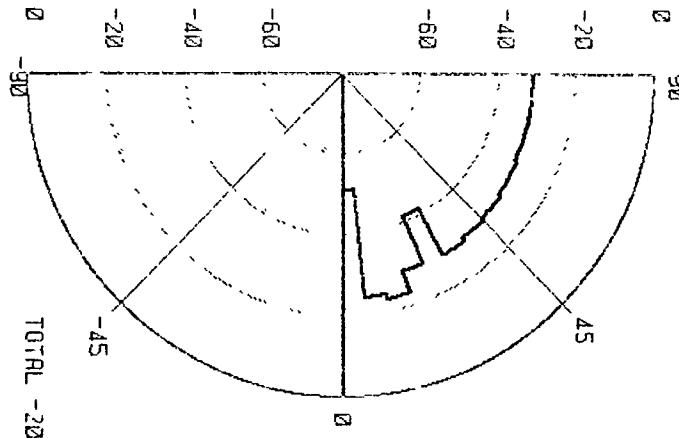
6000

E

ARRIVAL ANGLE

-40
-20 + + + + +
+ + + + +
+ + + + +
+ + + + +
+ + + + +

NOISE (DB)



70

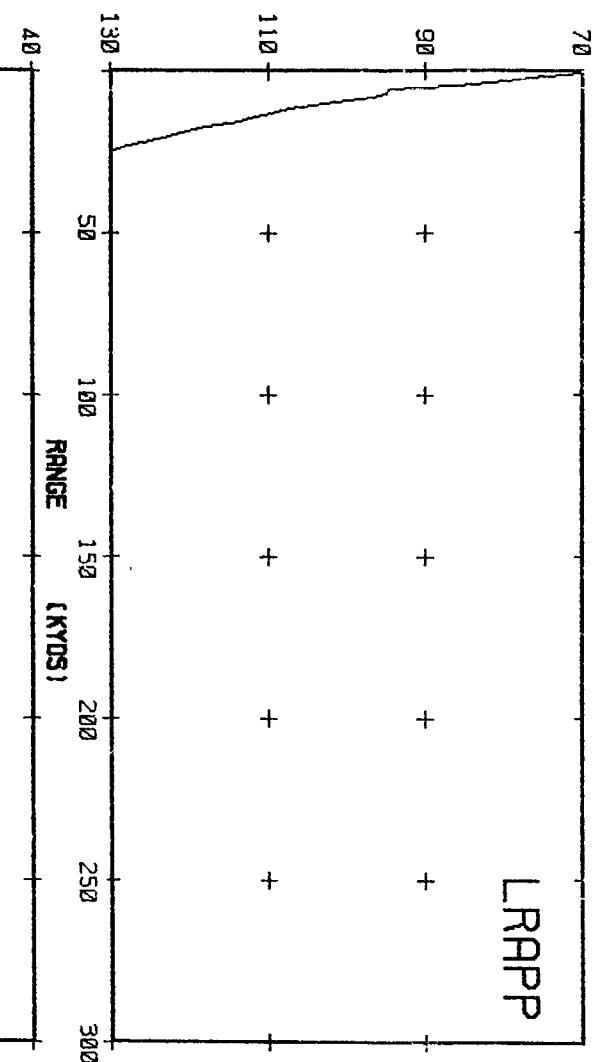
AREA 3A SUMMER

S 20 R 60 F 70

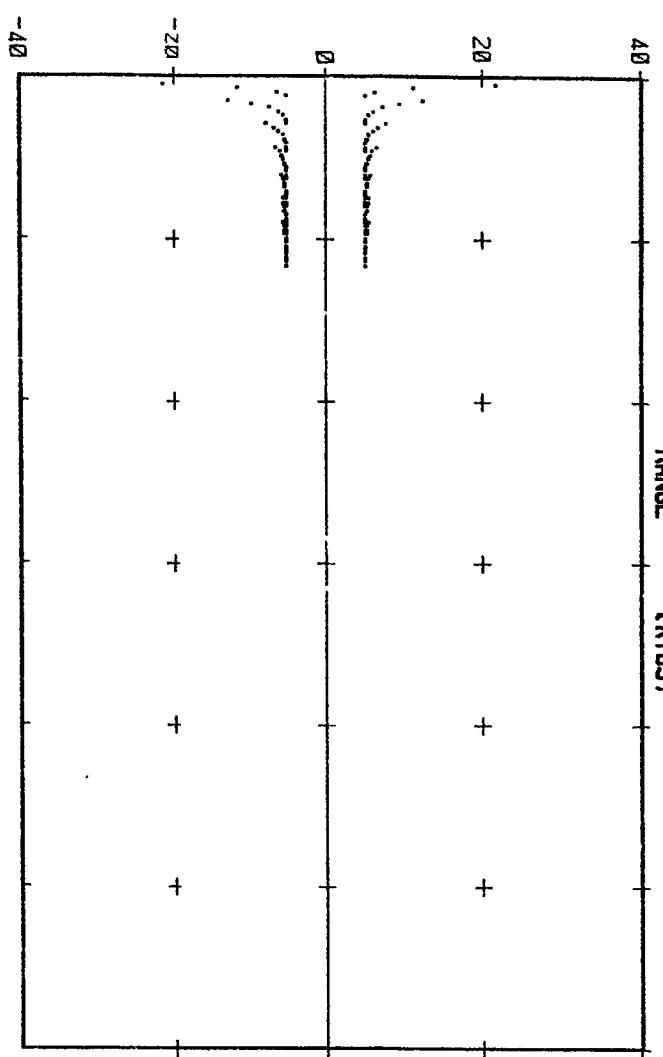
1450 M/S 1500 1550

LRAPP

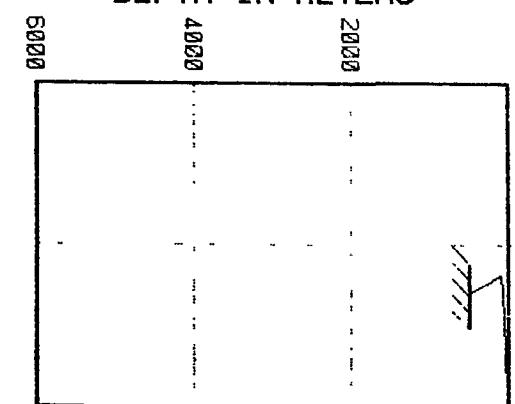
DB LOSS



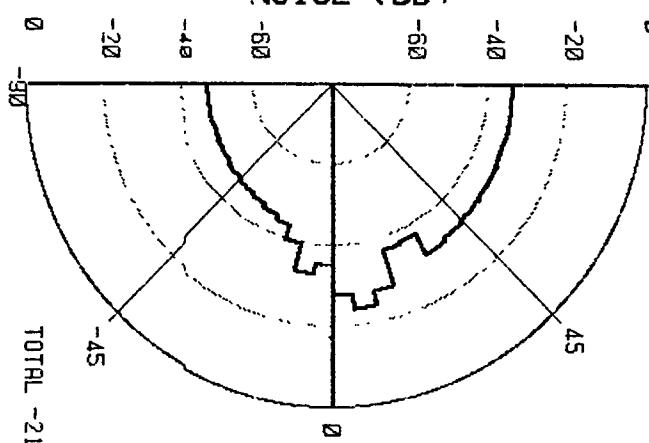
ARRIVAL ANGLE



DEPTH IN METERS

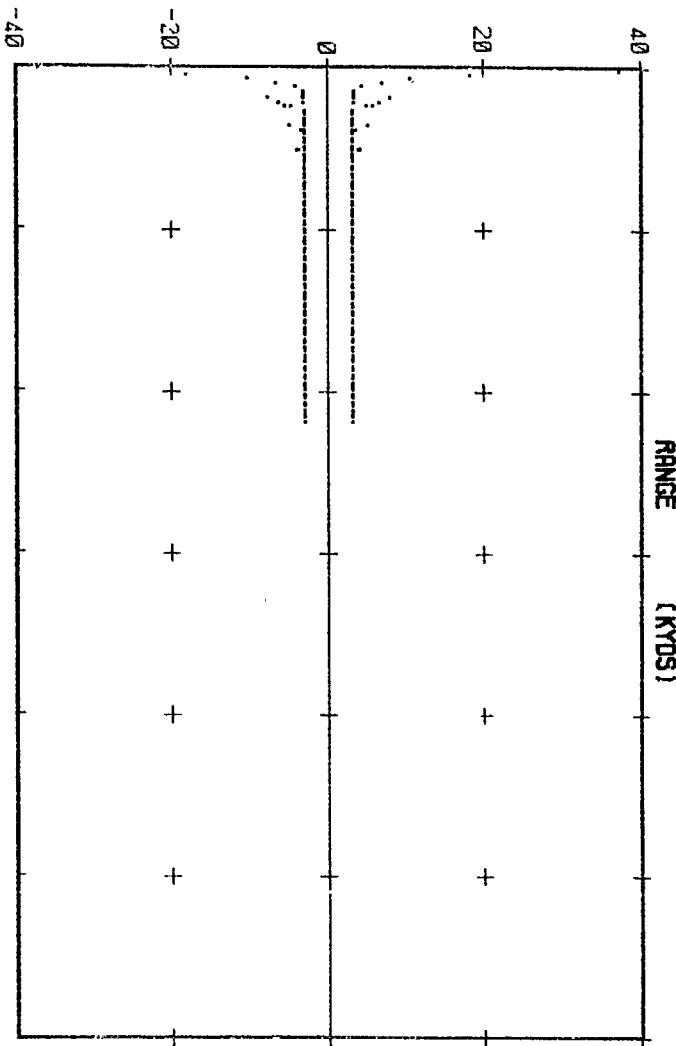


NOISE (DB)

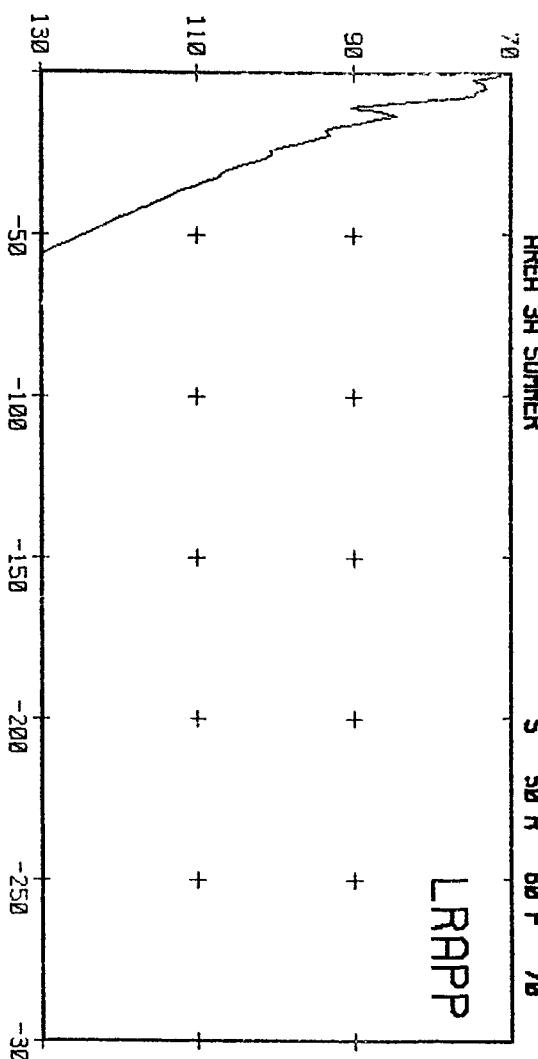


TOTAL -21.6 DB

ARRIVAL ANGLE

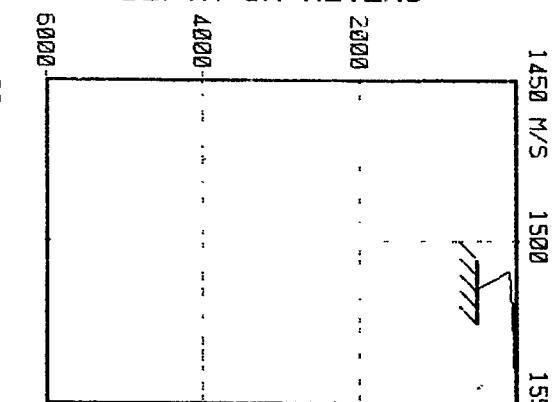


DB LOSS

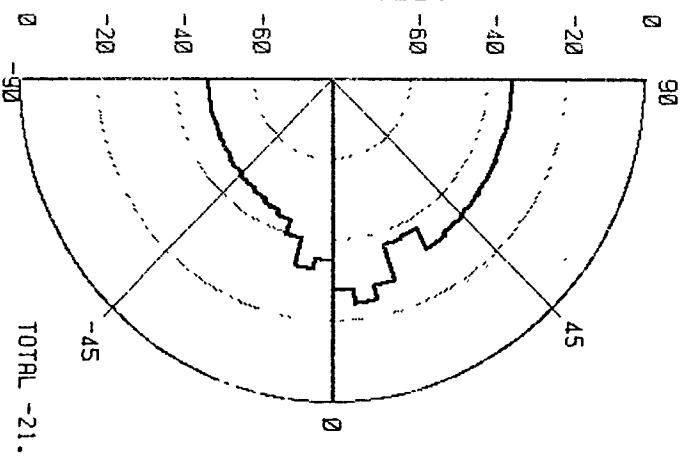


L RAPP

DEPTH IN METERS



NOISE (DB)



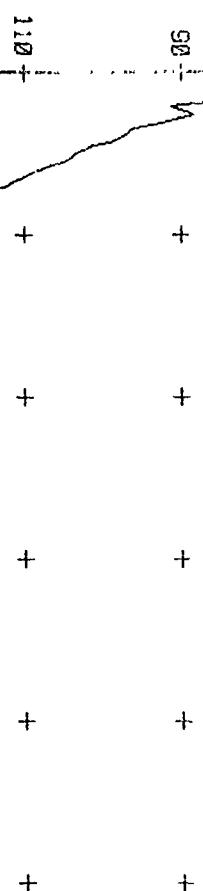
AREA 3R SUMMER

S 23° R 60° F 70

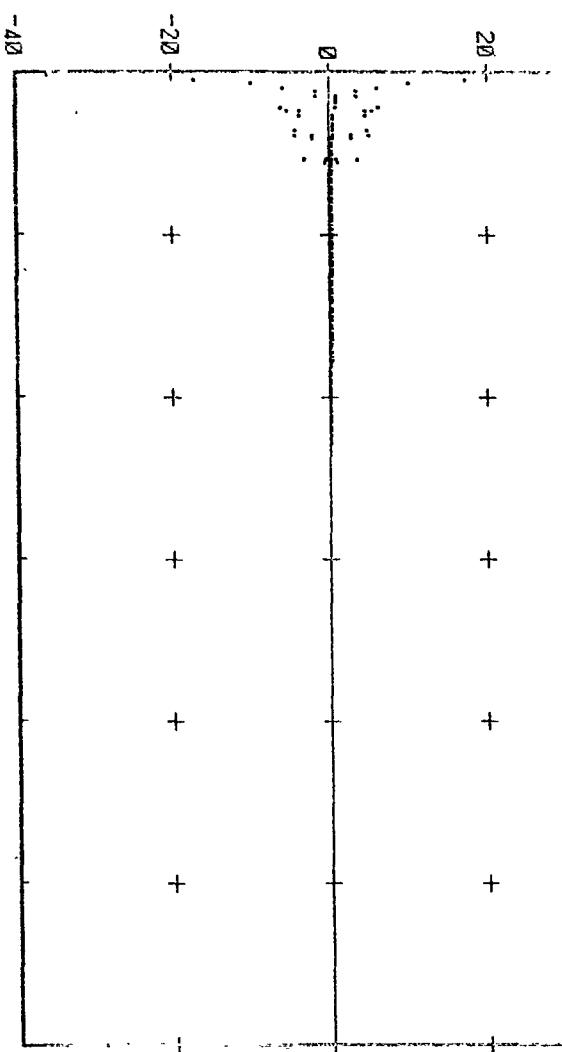
1450 M/S 1500 1550

LRAAPP

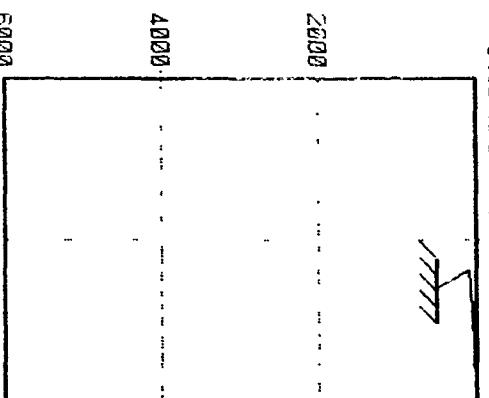
DB LOSS



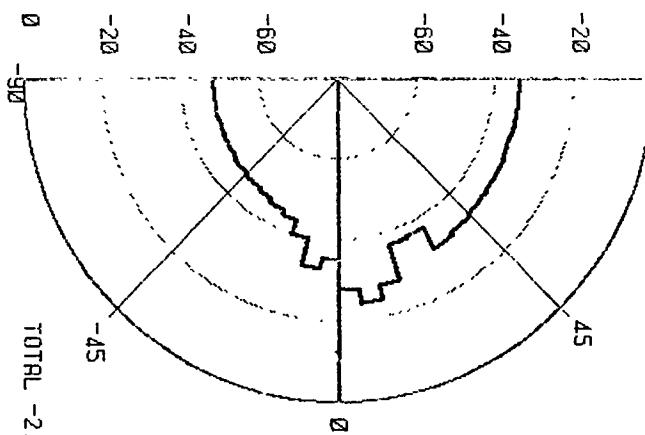
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



AREA 3A SUMMER

S 28 R 133 F 70

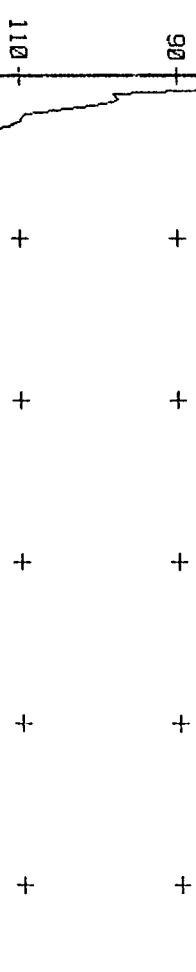
1450 M/S

1500

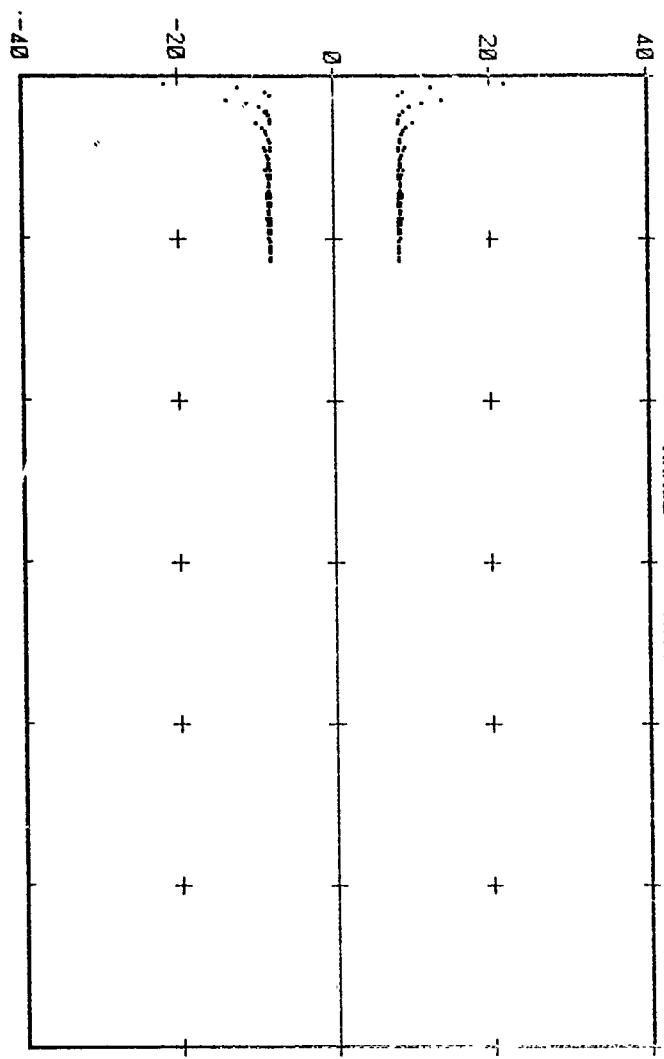
1550



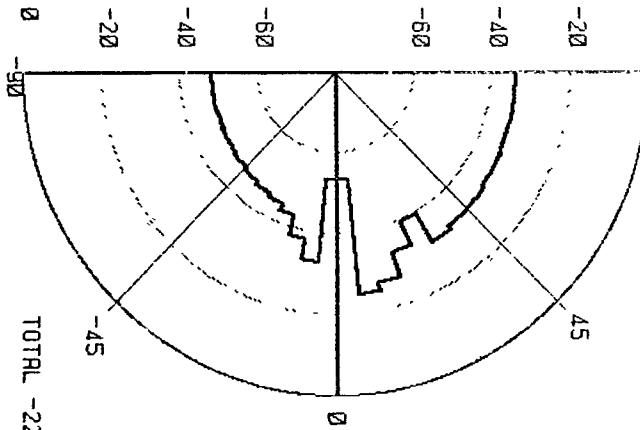
DB LOSS



ARRIVAL ANGLE



NOISE (DB)



DEPTH IN METERS



70

RARE 3H SUMMER

S 50 R 133 F 70

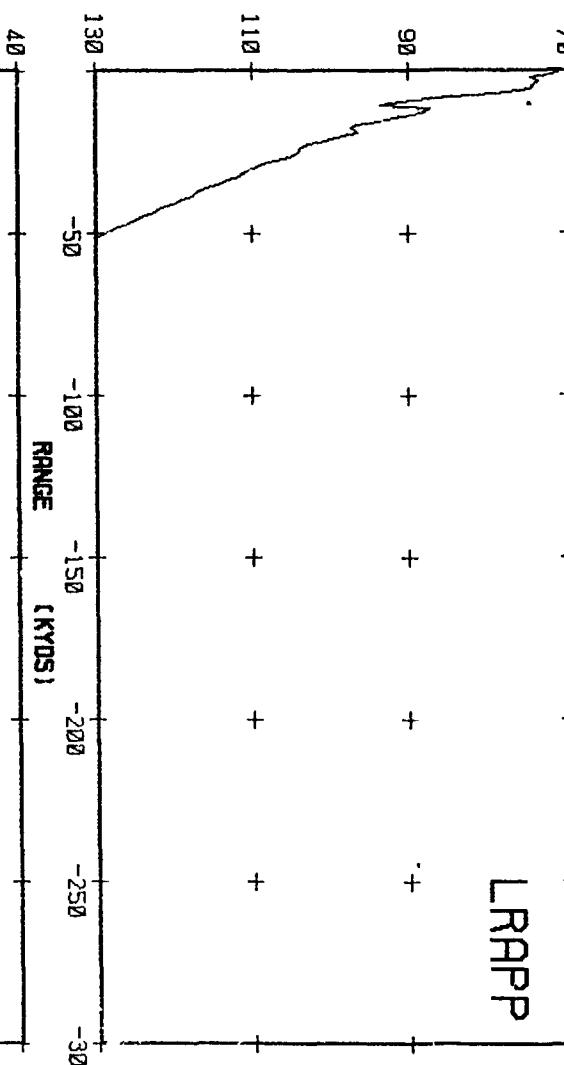
1450 M/S

1500

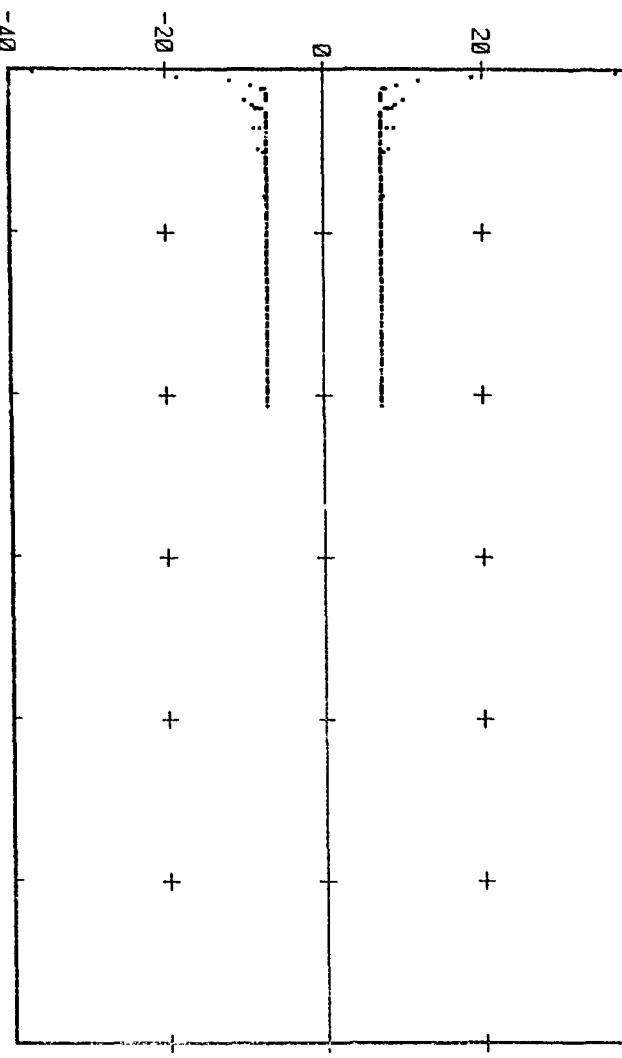
1550

LRAPP

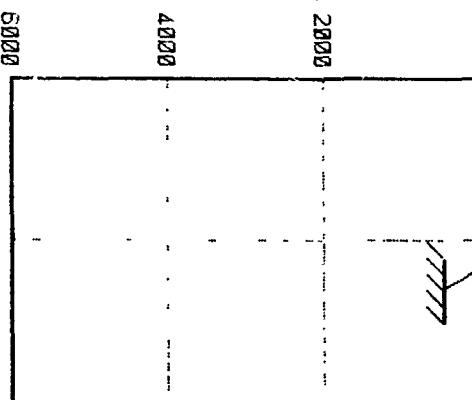
DB LOSS



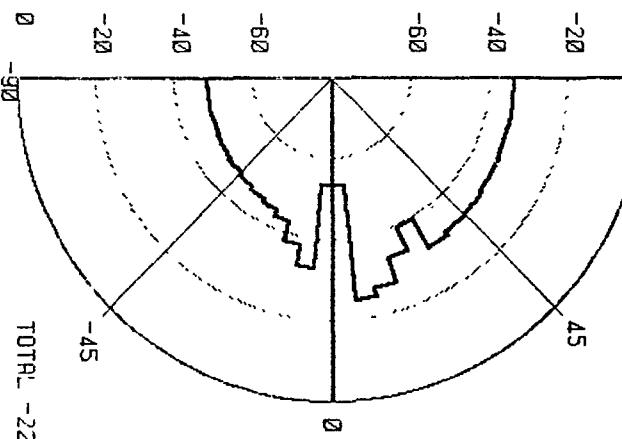
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -22.4 DB

70

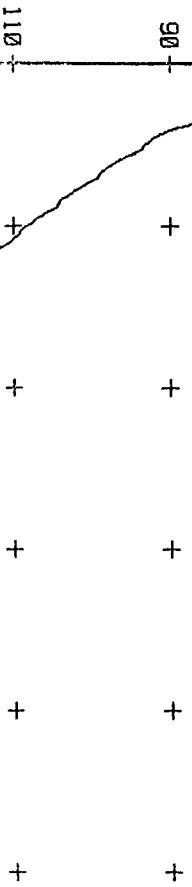
AREA 3A SUMMER

S 233 R 133 F 70

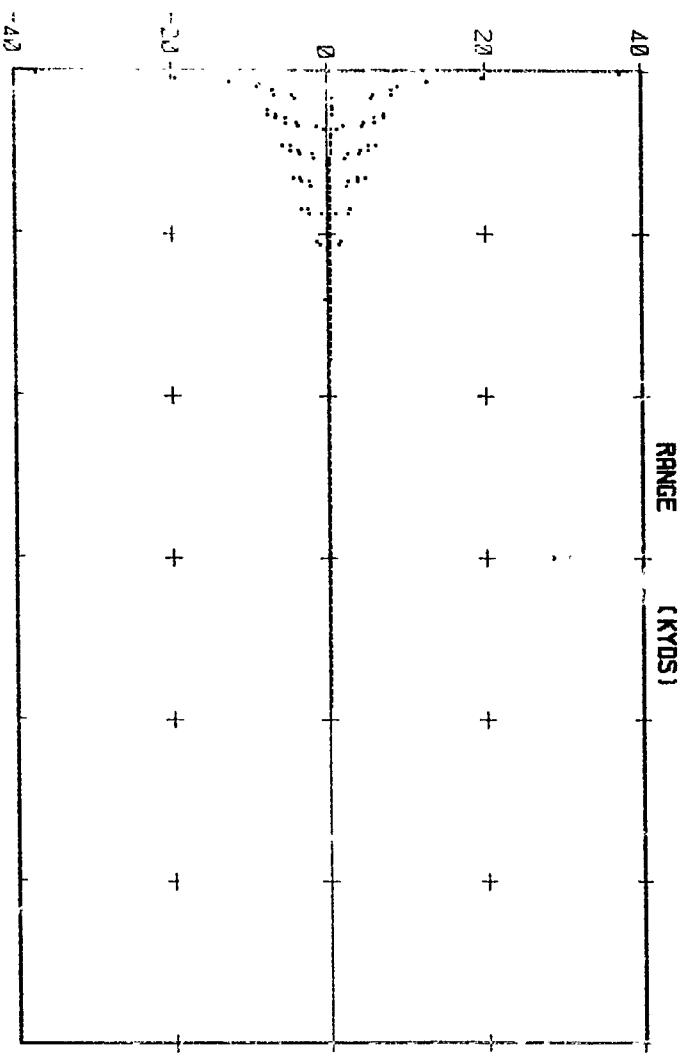
1450 M/S 1500 1550

LRAPP

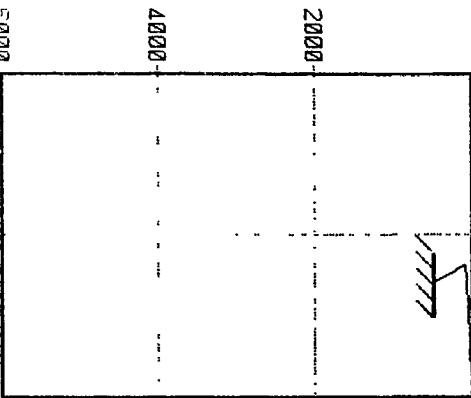
DB LOSS



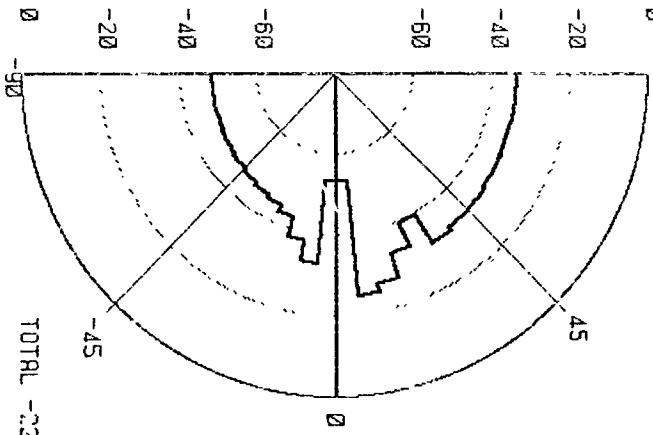
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -22.4 DB

79

AREA 3A SUMMER

S 20 R 262 F 78

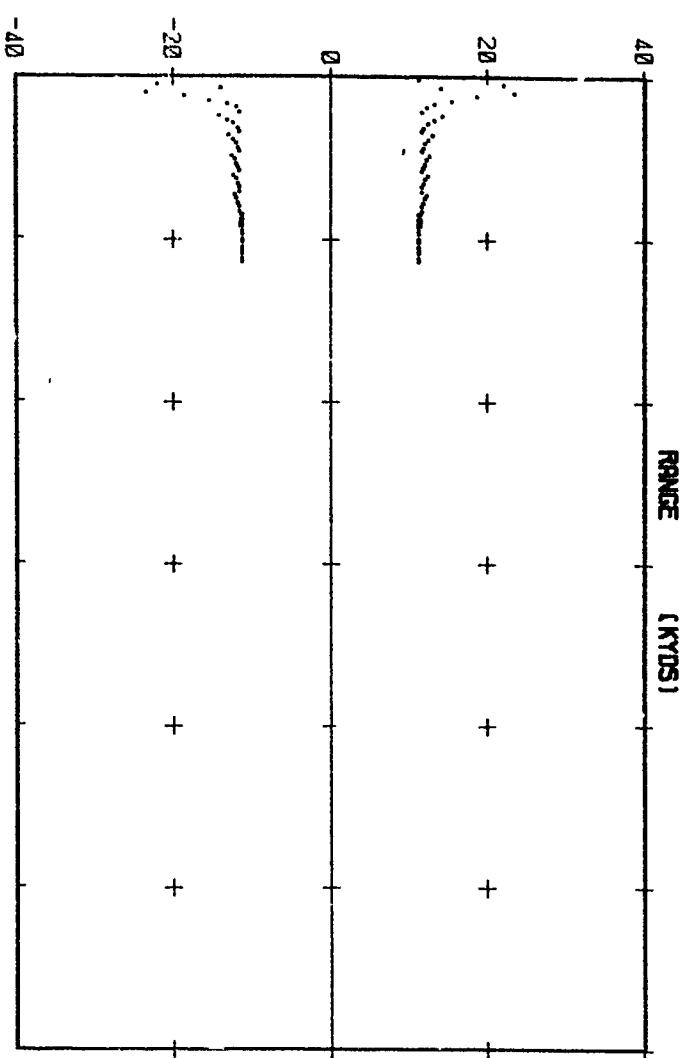
1450 M/S 1500 1550

LRAPP

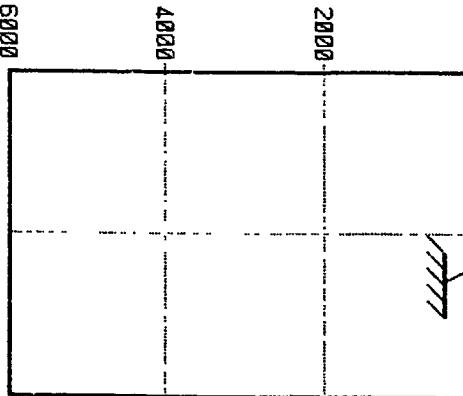
DB LOSS



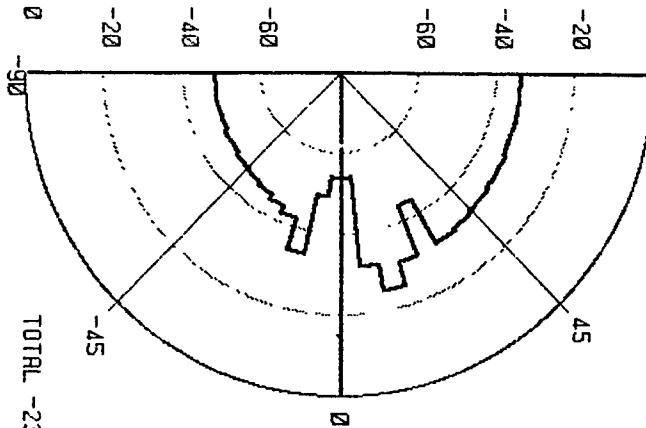
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

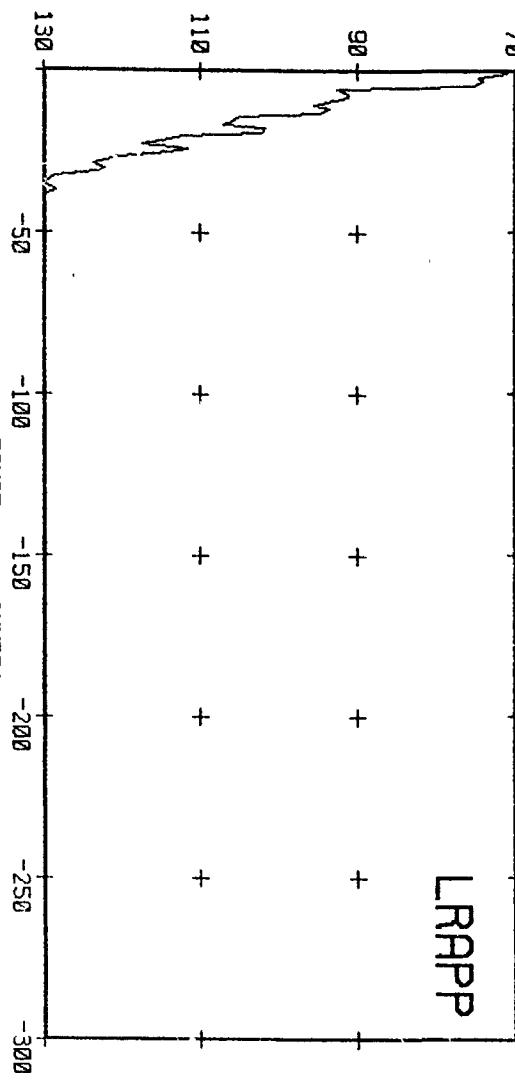
AREA 3A SUMMER

S 50 R 252 F 70

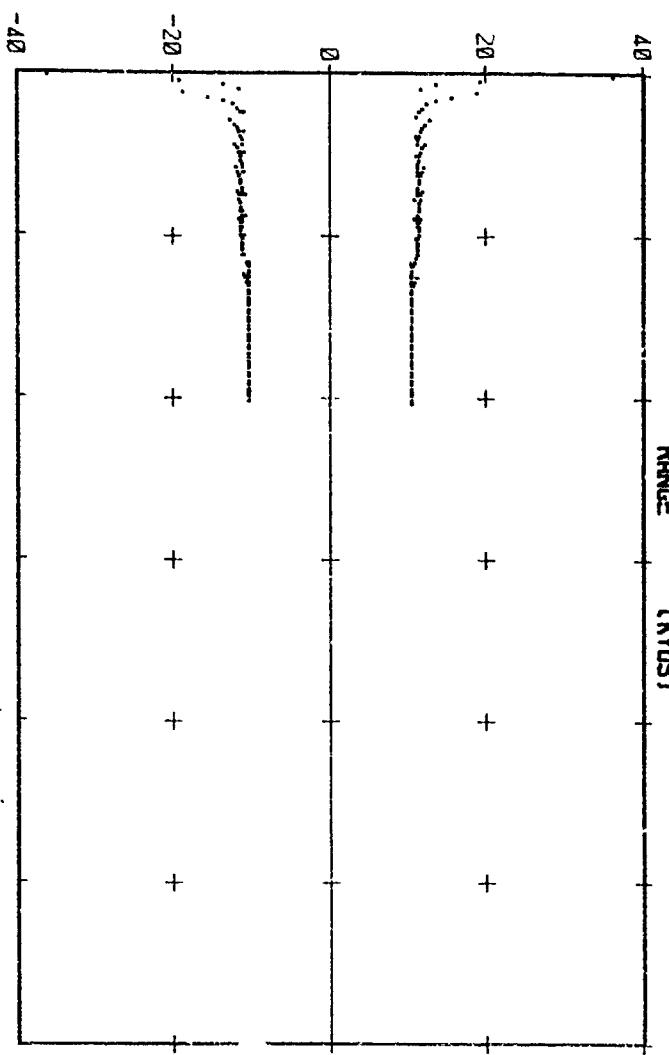
1450 M/S 1500 1550

LRAPP

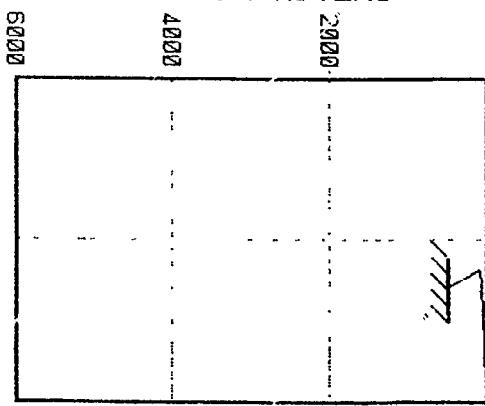
DB LOSS



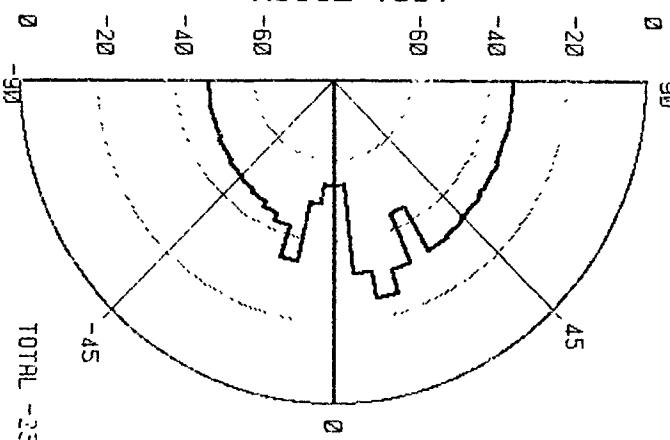
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -23.1 DB

70

ARRER 3A SUMMER

S 233 R 262 F 70

1450 M/S 1500 1550

LRAPP

DB LOSS

112

+

+

+

+

+

+

-

130

-

-

-

-

-

-

40

-

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-

100

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130

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20

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ARRIVAL ANGLE

-

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40

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DEPTH IN METERS

2000

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4000

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NOISE (DB)

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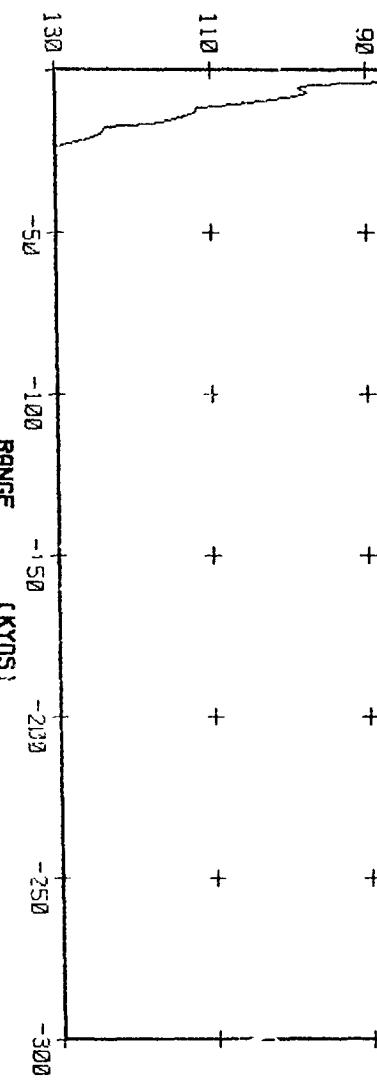
AFTER 3R SUMMER

S 20 R 300 F 70

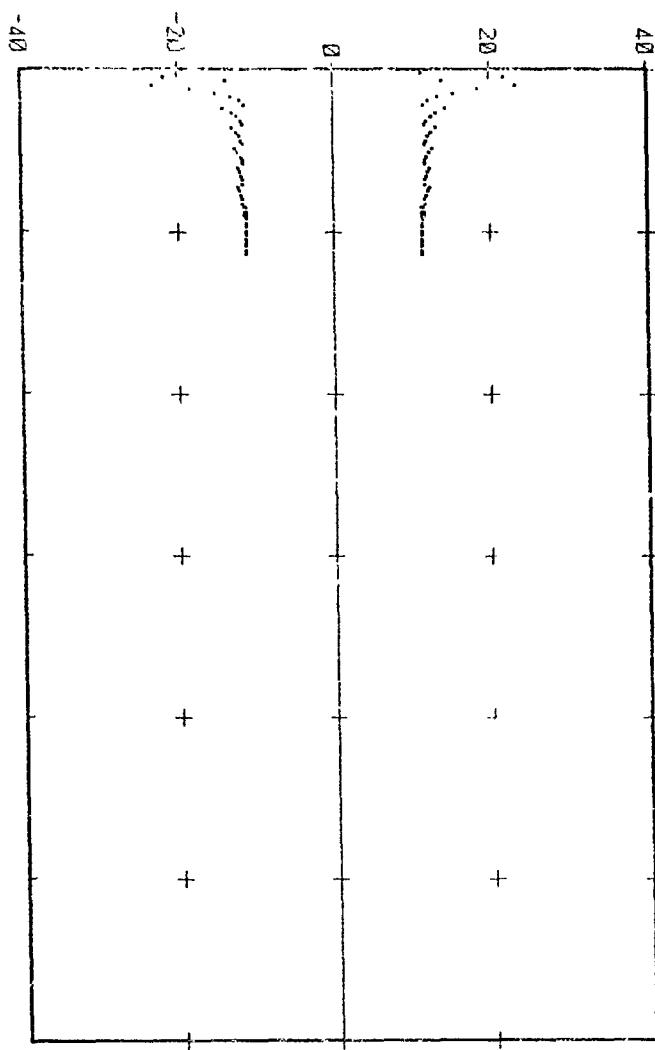
1450 M/S 1500 1550

LRAPP

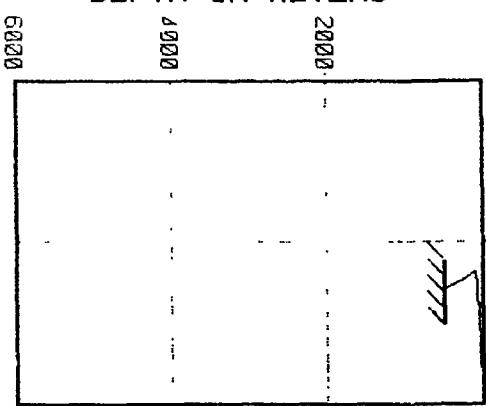
DB LOSS



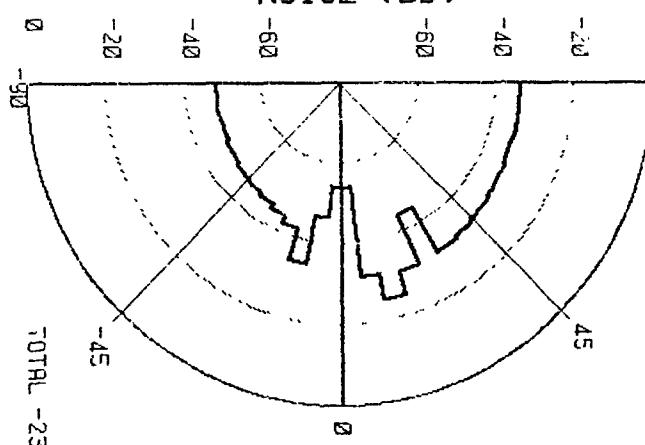
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



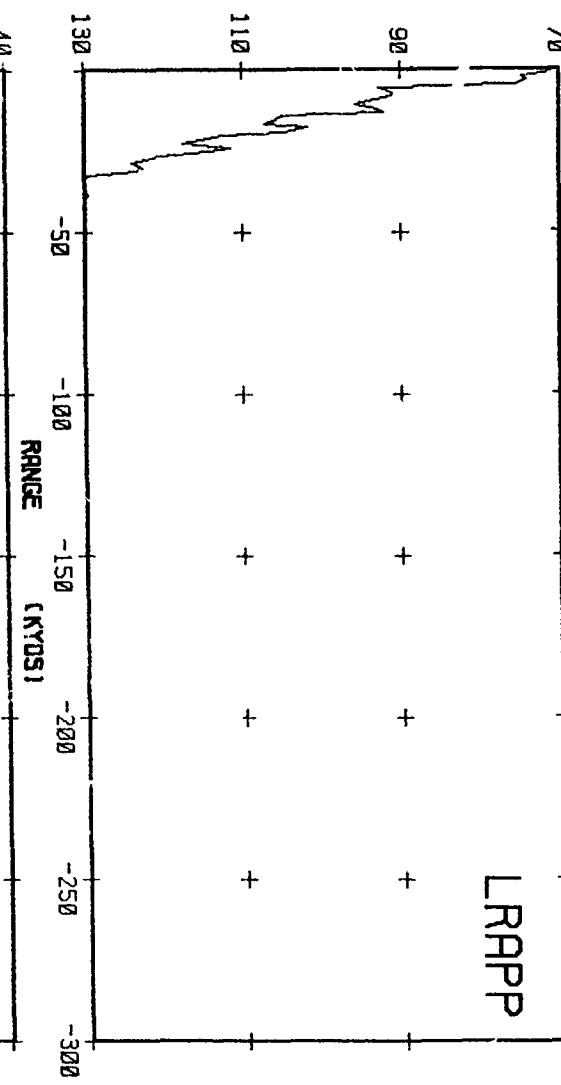
AREA 3A SUMMER

S 50 R 380 F 70

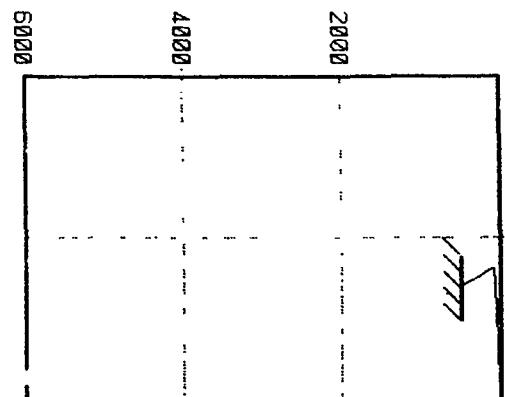
1450 M/S 1500 1550

LRAPP

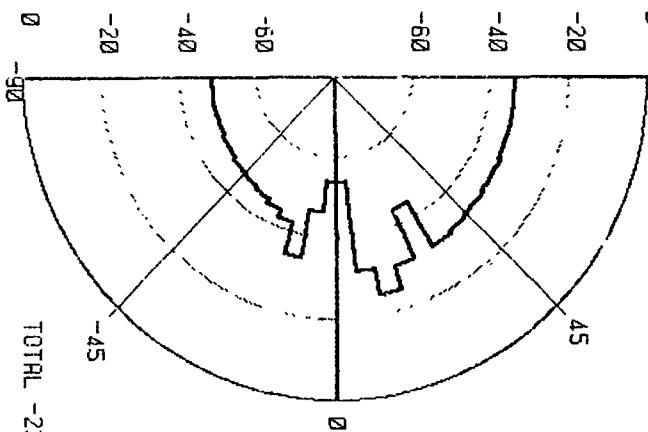
DB LOSS



DEPTH IN METERS



NOISE (DB)



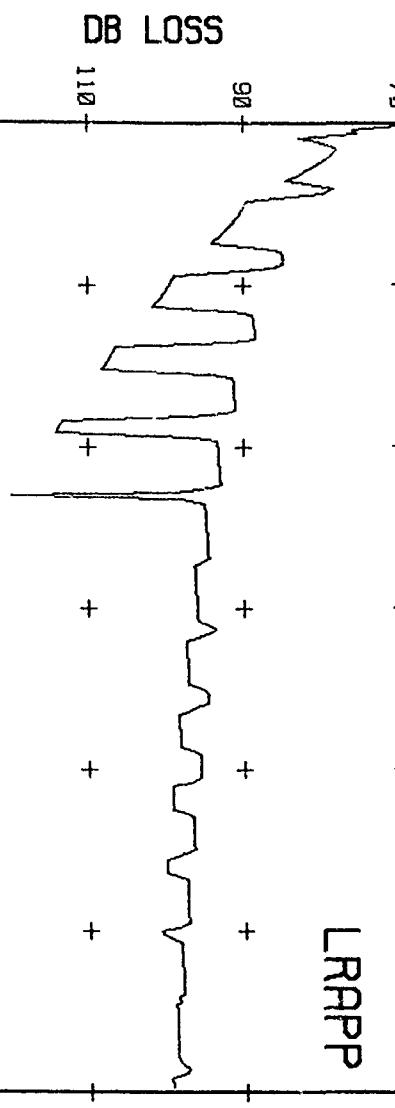
TOTAL -23.1 DB

AREA 3A SUMMER

S 233 R 300 F 70

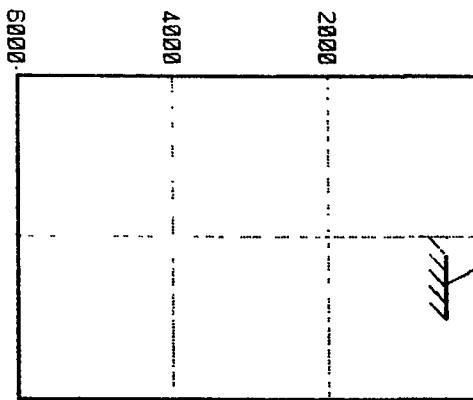
1450 M/S 1500 1550

DB LOSS

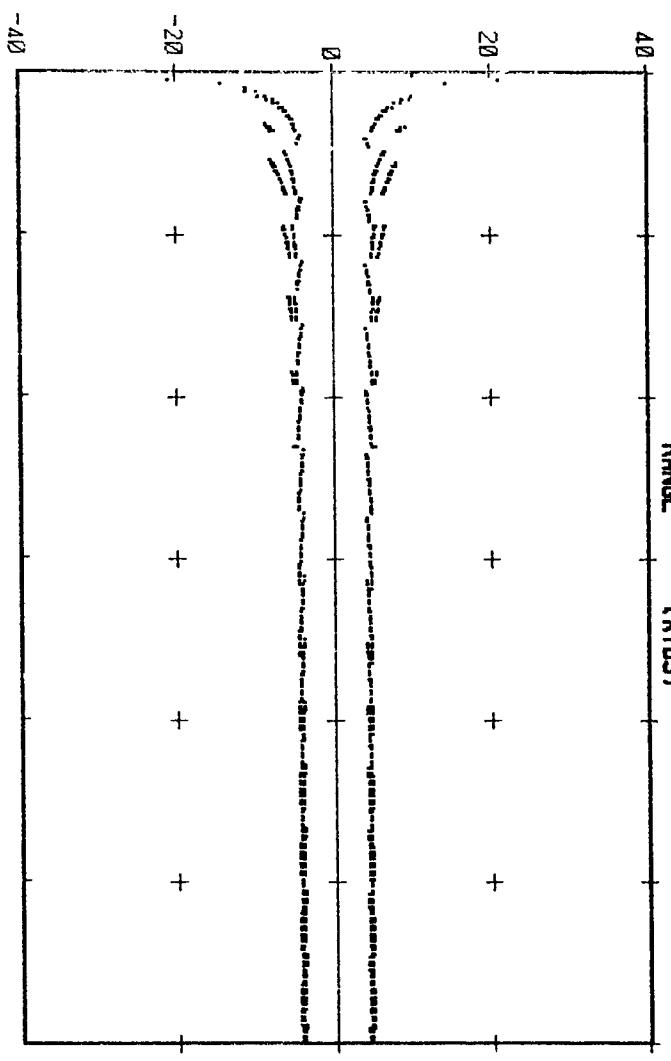


L RAPP

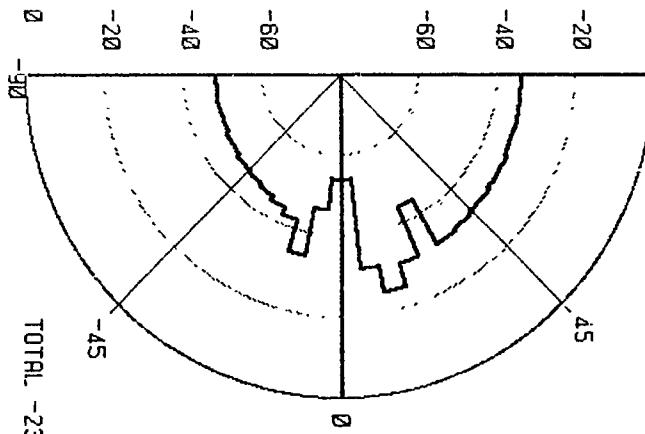
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



70

AREA 3R SUMMER

S 20 R 1000 F 70

1450 M/S 1500 1550

LRRAPP

DB LOSS

+	+	+	+	+
+	+	+	+	+
+	+	+	+	+
+	+	+	+	+

130
110
90

40

RANGE (KMS)

-50
-100
-150
-200
-250
-300

DEPTH IN METERS

2000	...
4000	.....
6000	....

2000	...
4000	.....
6000	....

ARRIVAL ANGLE

20	+	+	+	+	+
40	+	+	+	+	+
60	+	+	+	+	+
80	+	+	+	+	+
100	+	+	+	+	+

NOISE (DB)

-20	...
-40	.....
-60	....

-20	...
-40	.....
-60	....

-20	...
-40	.....
-60	....

-20	...
-40	.....
-60	....

-20	...
-40	.....
-60	....

-20	...
-40	.....
-60	....

-20	...
-40	.....
-60	....

-20	...
-40	.....
-60	....

-20	...
-40	.....
-60	....

-20	...
-40	.....
-60	....

-20	...
-40	.....
-60	....

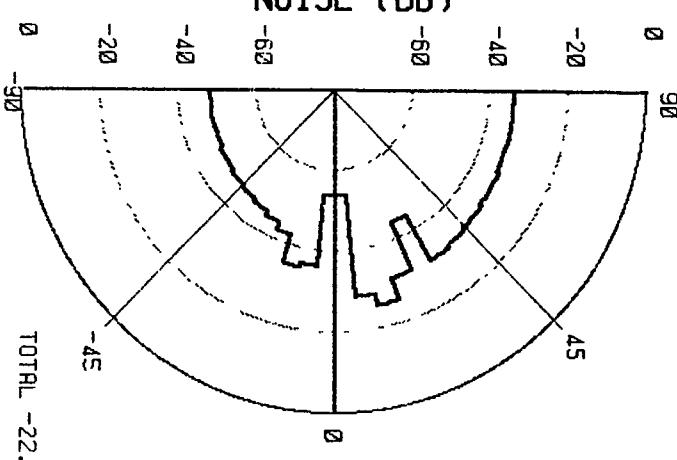
-20	...
-40	.....
-60	....

-20	...
-40	.....
-60	....

-20	...
-40	.....
-60	....

-20	...
-40	.....
-60	....

-20	...
-40	.....
-60	....



TOTAL -22.9 DB

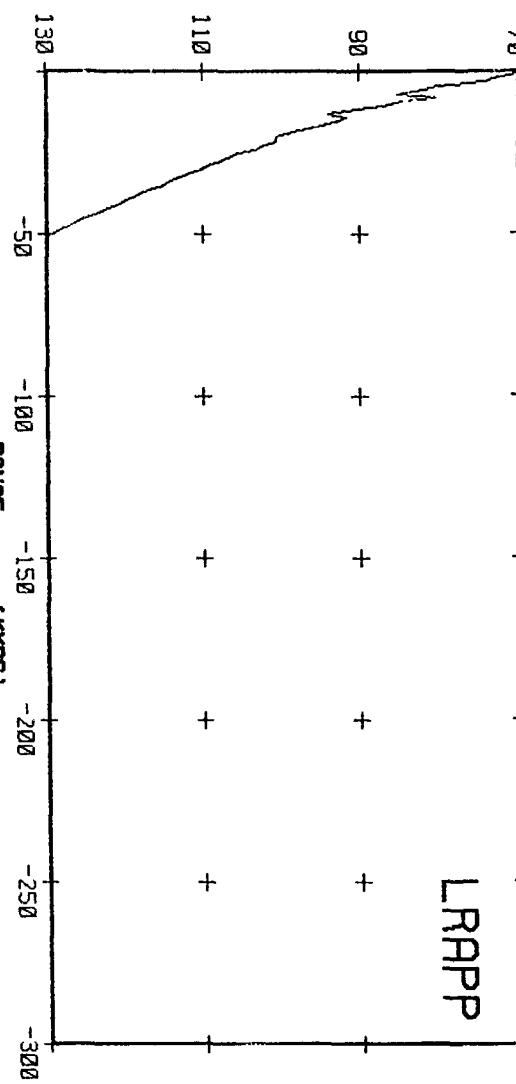
AREA 3A SUMMER

S 50 R 1000 F 70

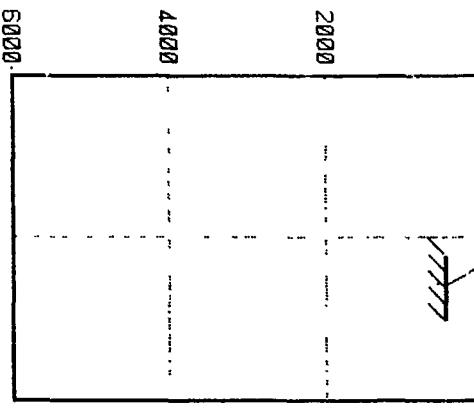
1450 M/S 1500 1550

LRAFP

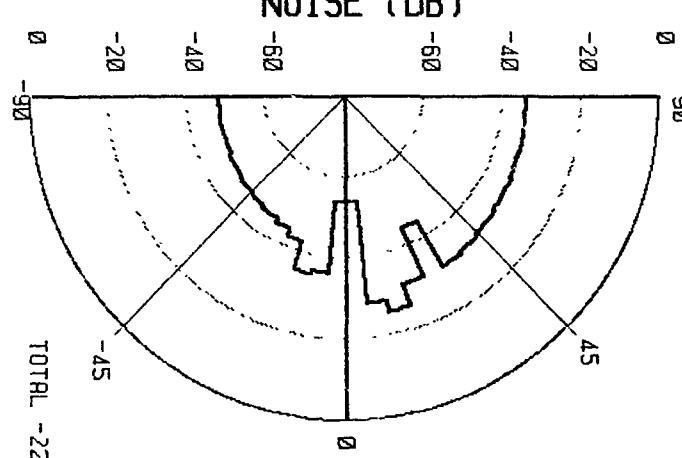
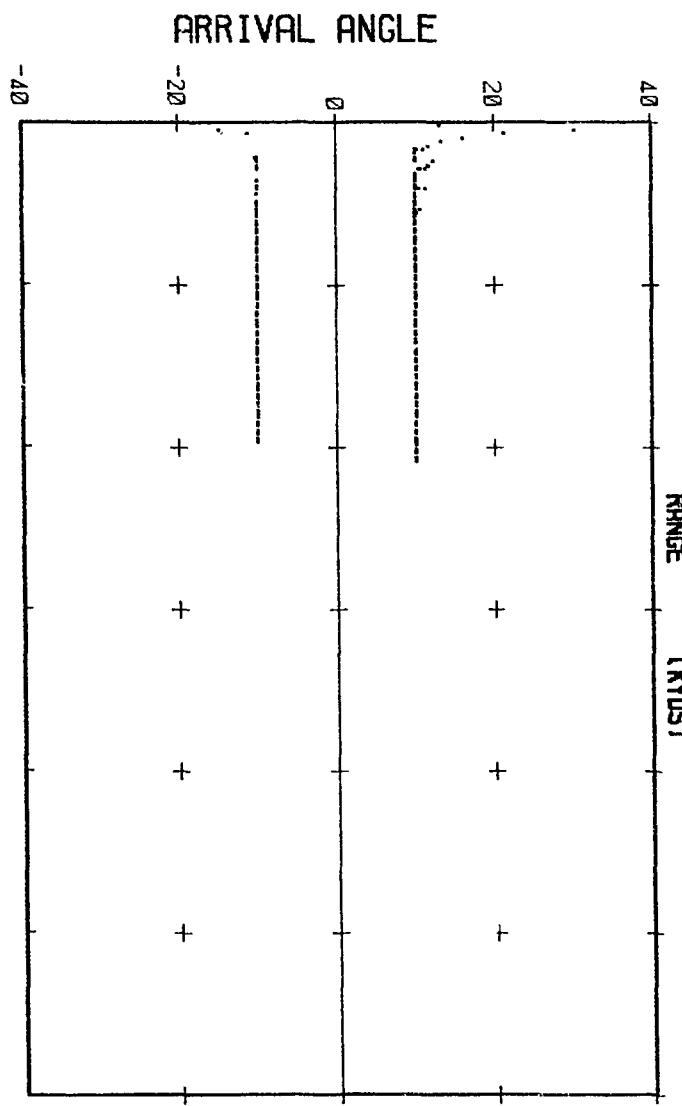
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -22.9 DB

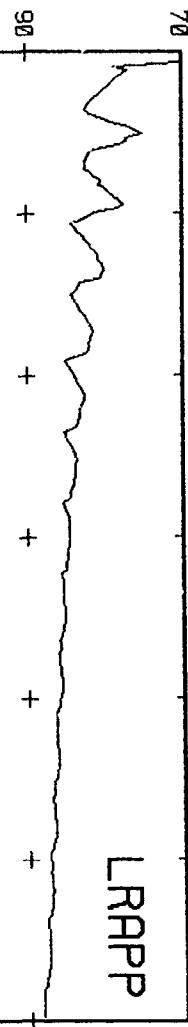
ARR 3R SUMMER

S 233 R 1000 F 70

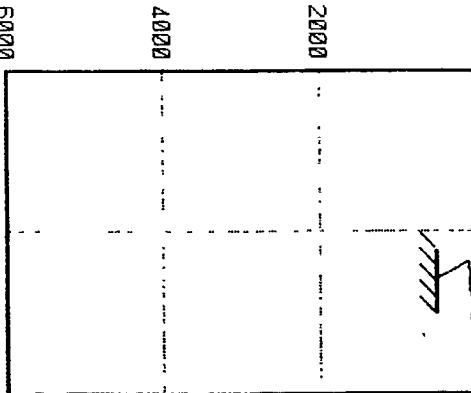
1450 M/S 1500 1550

L RAPP

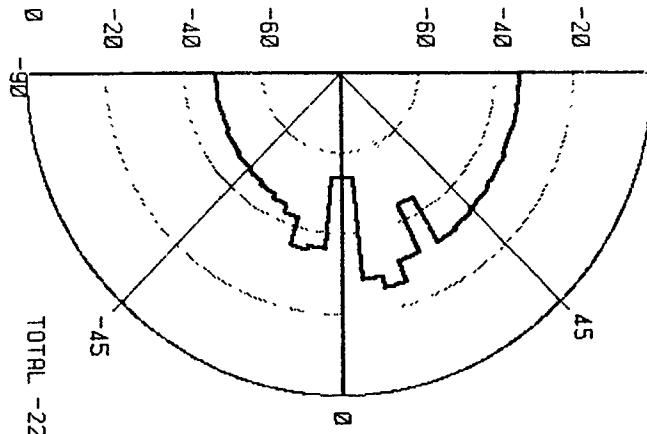
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -22.9 DB

70

AREA 3A SUMMER

S 20 R 1500 F 70

1450 M/S

1500

1550

LRAPP

DB LOSS

90

+

+

+

+

2000

4000

6000

130

110

40

RANGE

(KIOS)

-100

-150

-200

-250

-300

DEPTH IN METERS

ARRIVAL ANGLE

-40

20

0

-20

-40

0

+

+

+

+

+

-

-

-

20

+

+

+

+

+

-

-

-

NOISE (DB)

0

90

0

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

-280

-300

-320

-340

-360

-380

-400

-420

-440

-460

-480

-500

-520

-540

-560

-580

-600

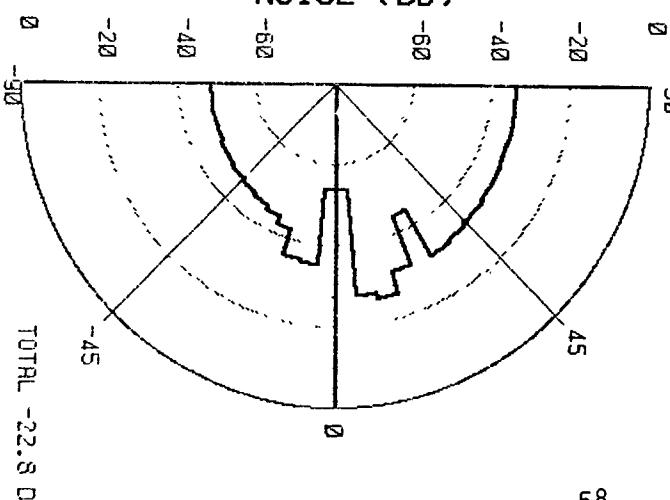
-620

-640

-660

-680

-700



70

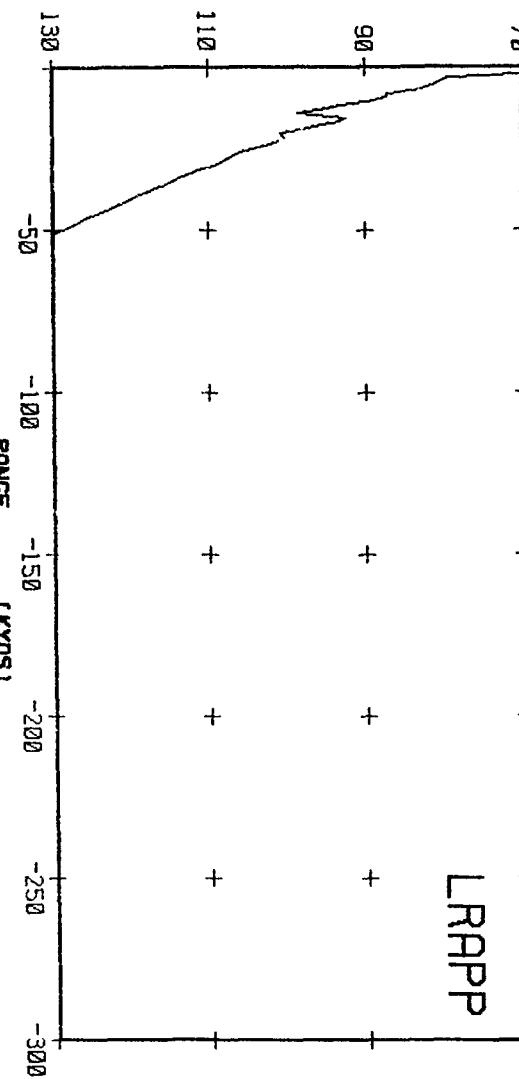
AREA 3A SUMMER

S 50 R 1500 F 70

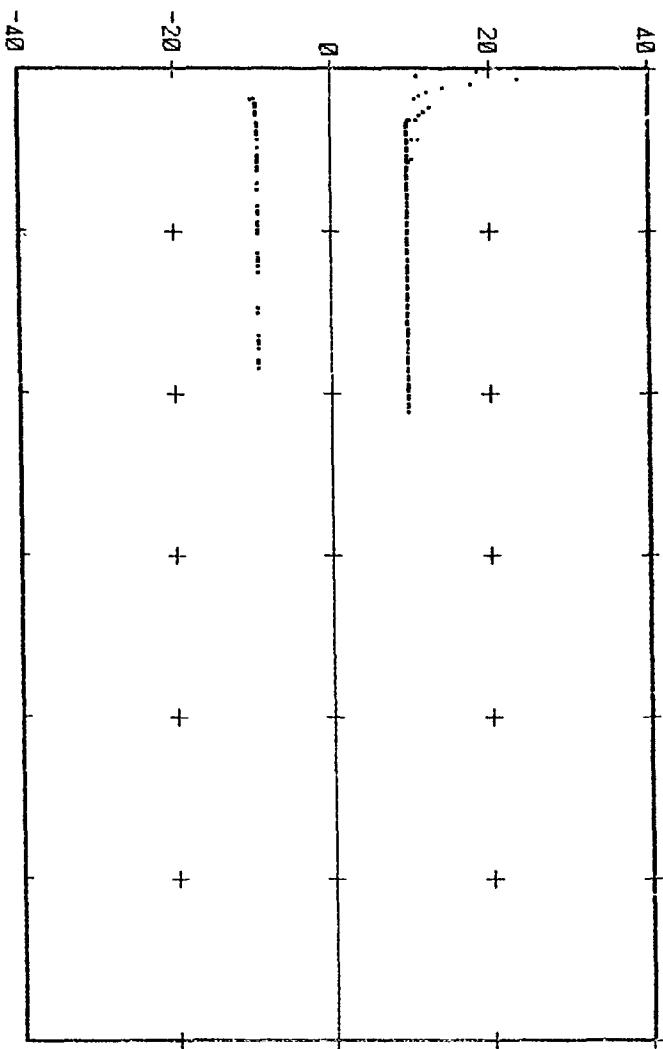
1450 M/S 1500 1550

LRAPP

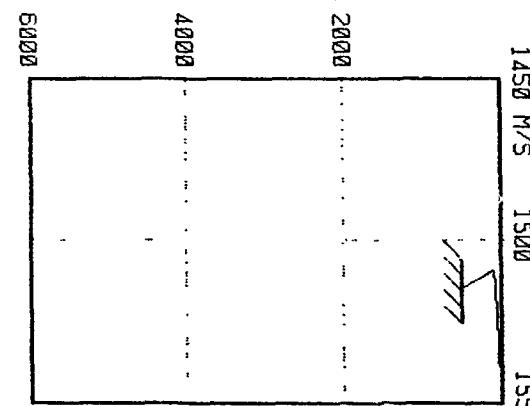
DB LOSS



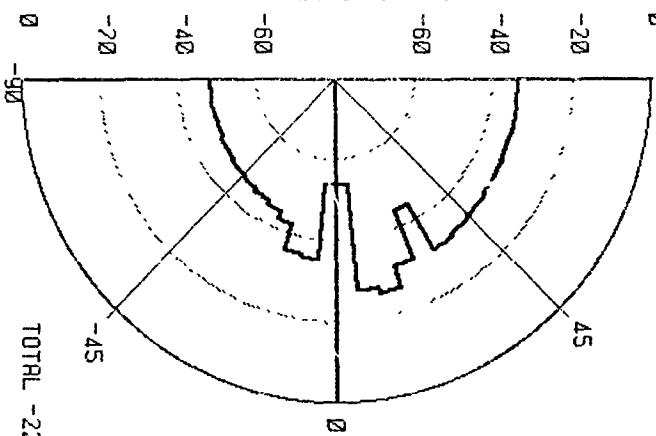
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



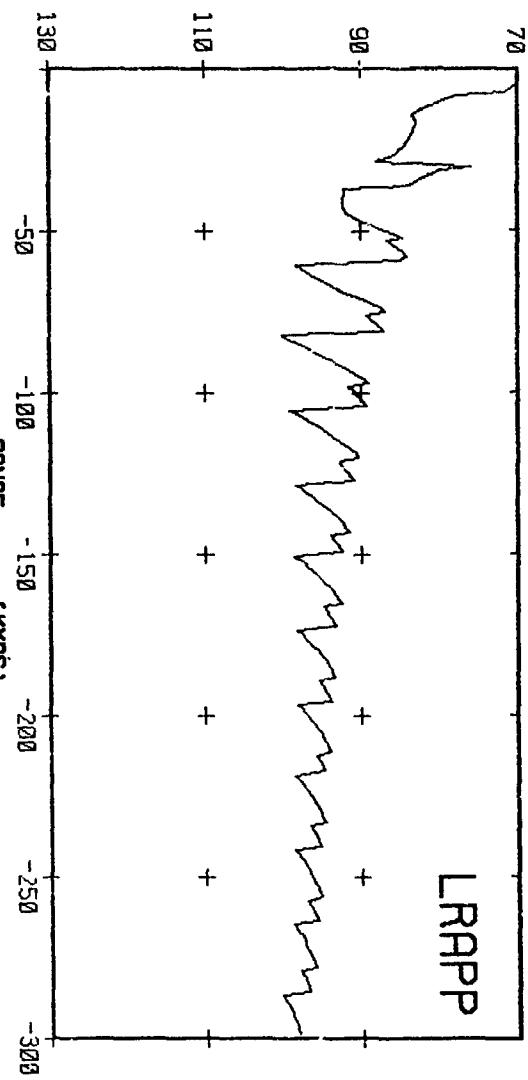
TOTAL -22.8 DB

AREA 3A SUMMER

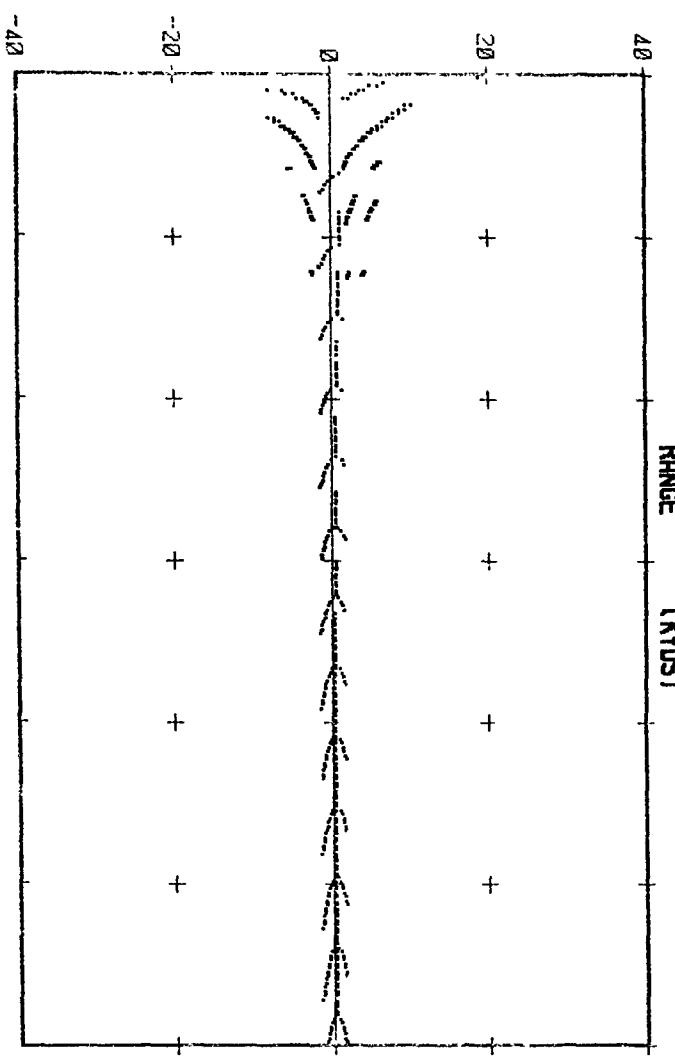
S 233 R 1500 F 70

1450 M/S 1500 1550

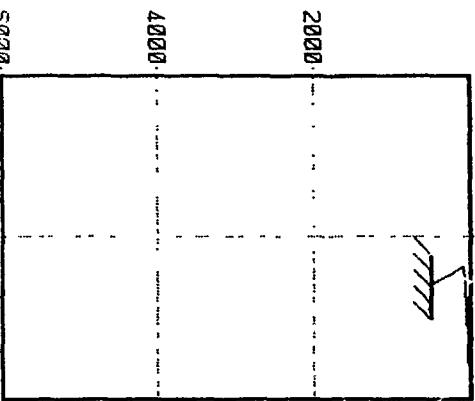
DB LOSS



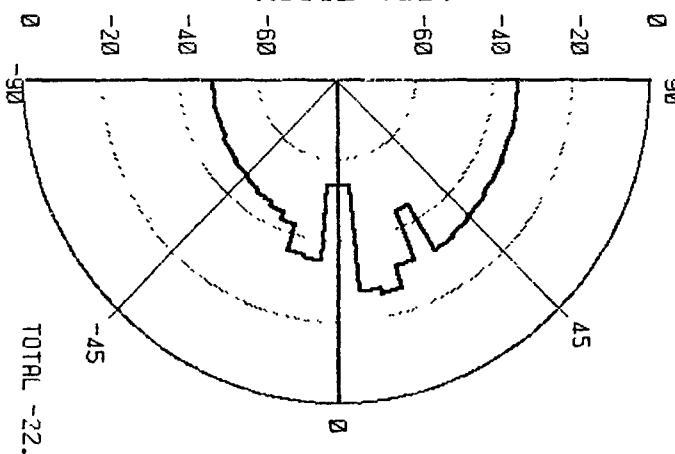
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -22.8 dB

AREA 3A SUMMER

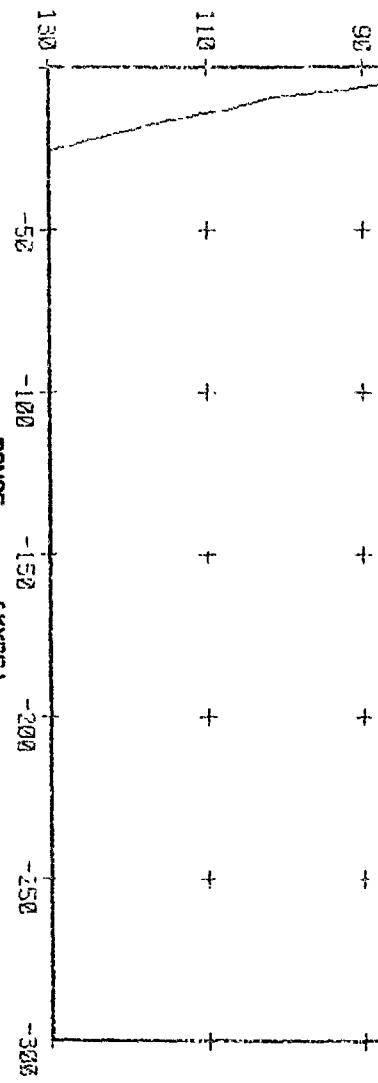
S 20 R 1640 F 70

1453 M/S 1520 1550

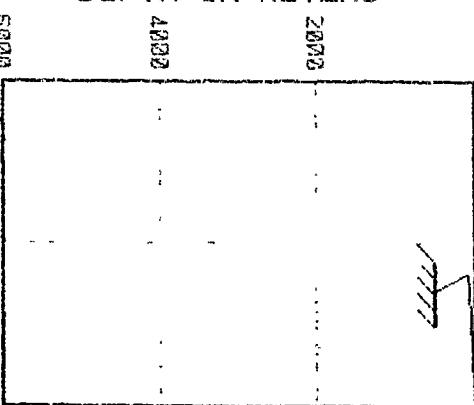
LRAFP

73

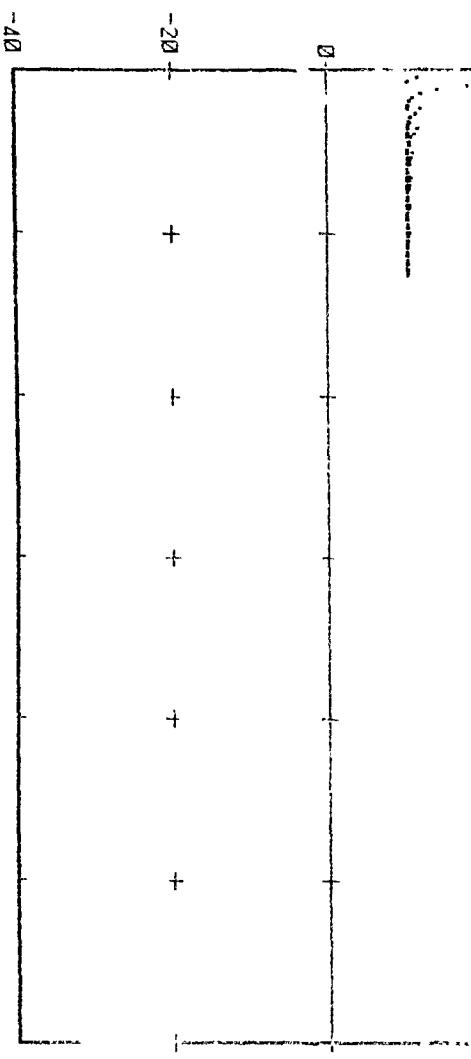
DB LOSS



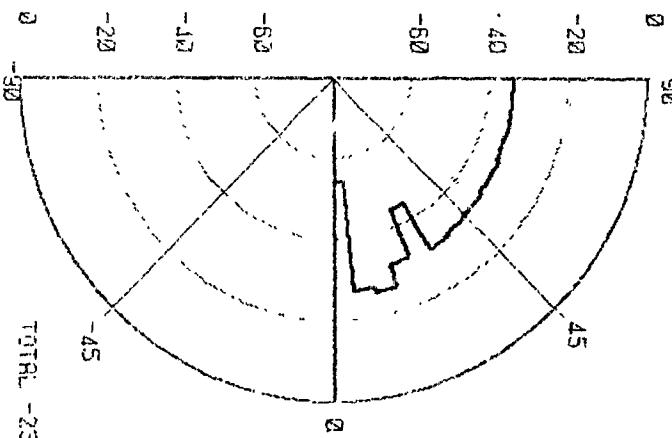
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -23.2 DB

-61-

AREA 3A SUMMER

S 52 R 1640 F 70

1450 M/S 1500 1550

LRAAPP

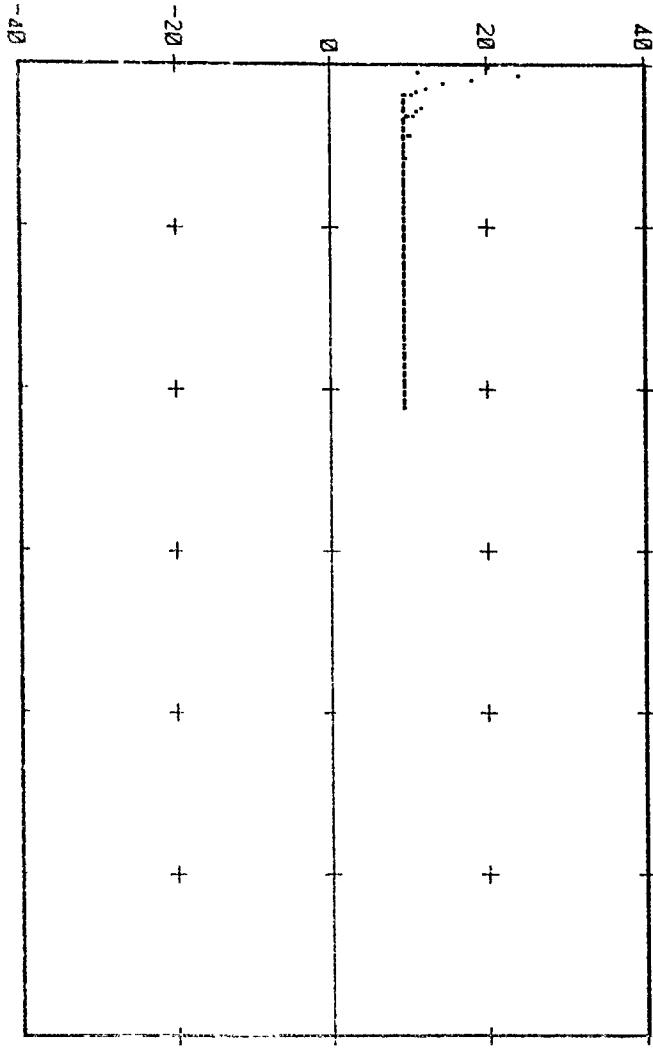
DB LOSS

90 +
110 +
+
+
+
+
+
+
+

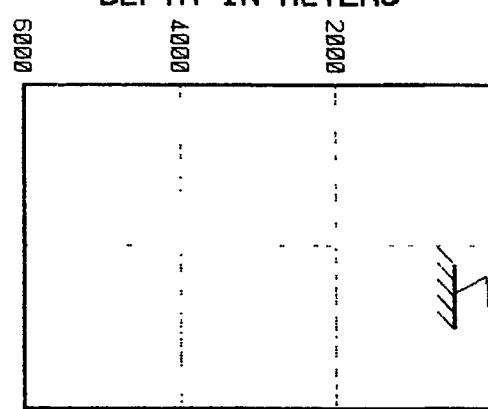
130
110
90
70
50
30
10

RANGE (KILOMETERS)

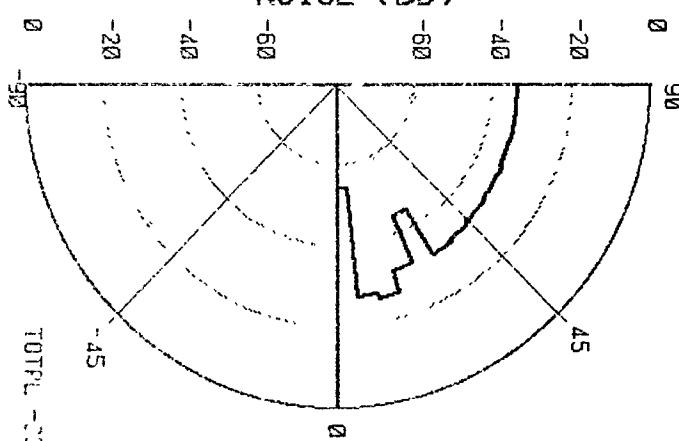
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL ~3.2 DB

70

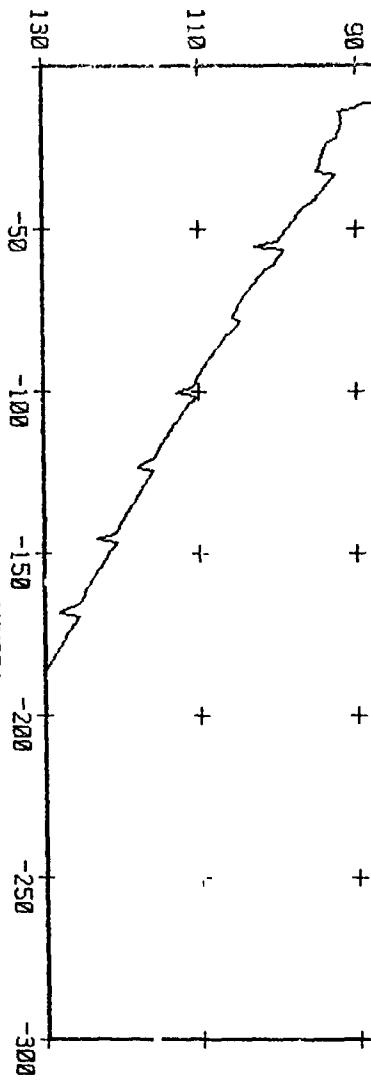
AREA 3A SUMMER

S 233 R 1640 F 70

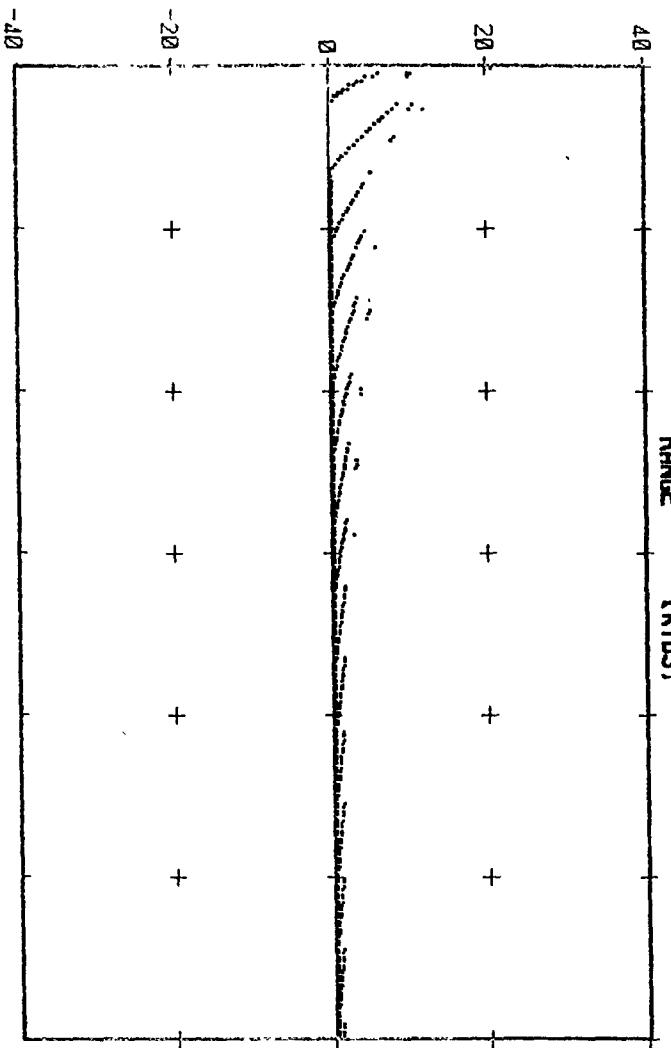
1450 M/S 1500 1550

LRAPP

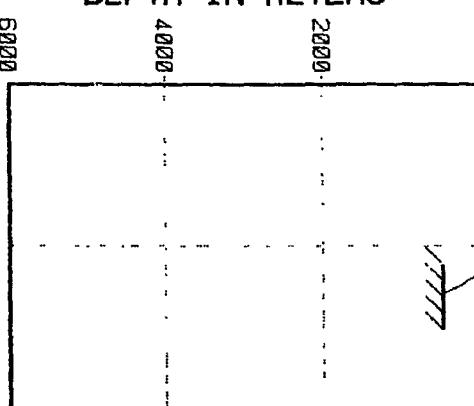
DB LOSS



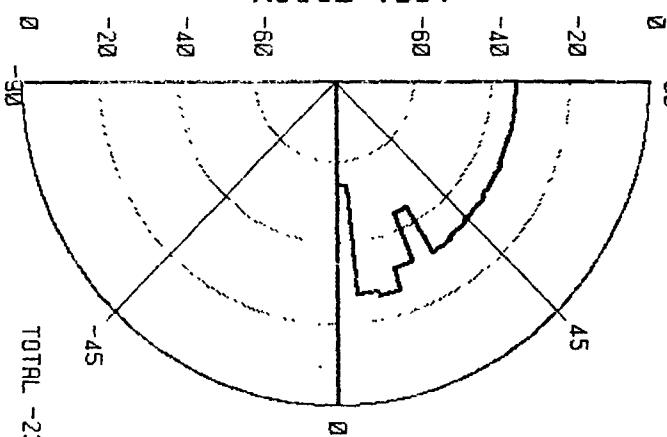
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -23.2 DB

70

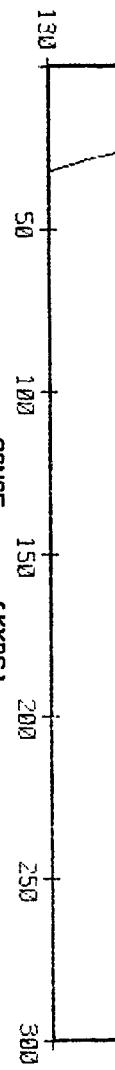
FREE 3A SUMMER

S 70 R 62 F 150

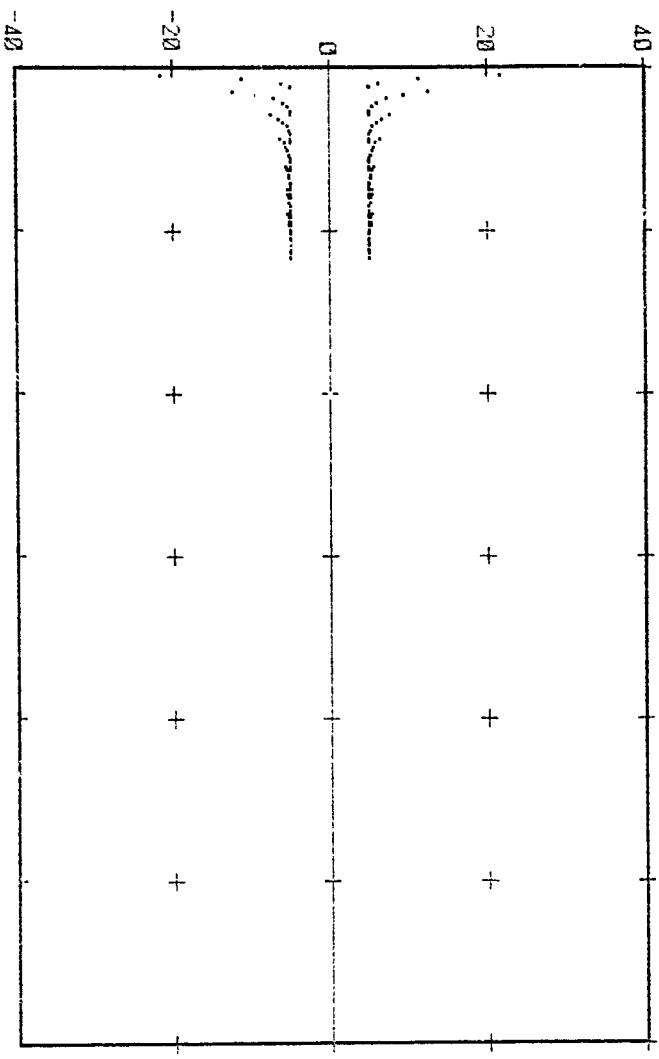
1450 11/5 1500 1550

LRAPP

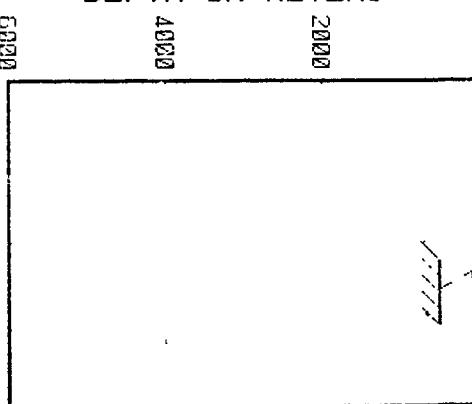
DB LOSS



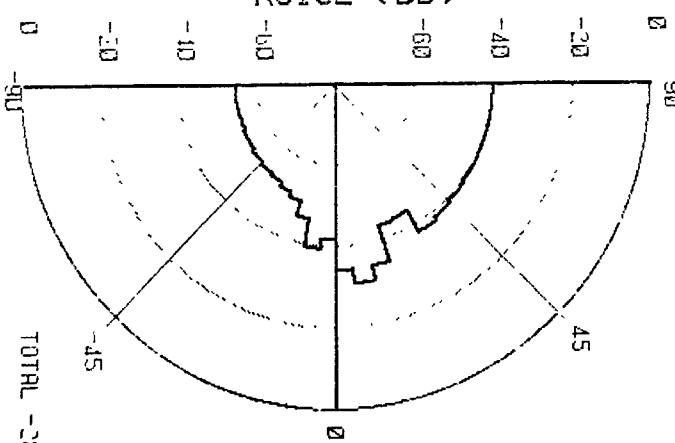
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -25.1 DB

70

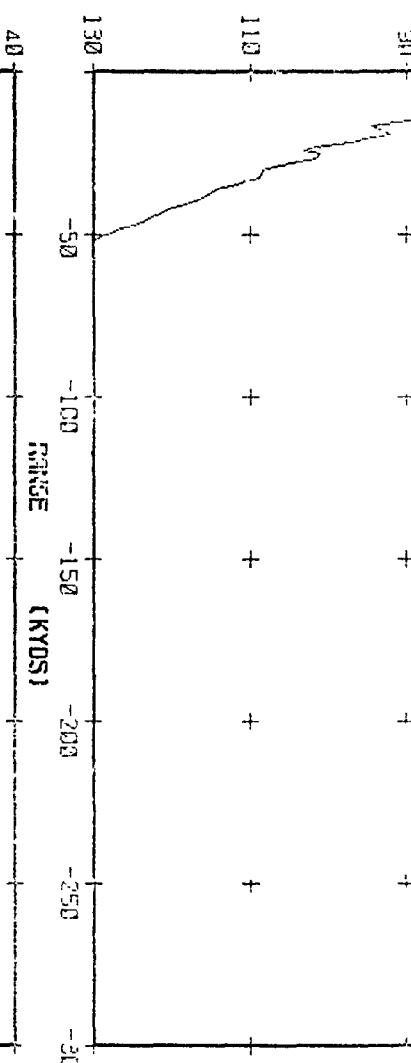
ARFUL 37 SPT

S 5000 6.1 1500

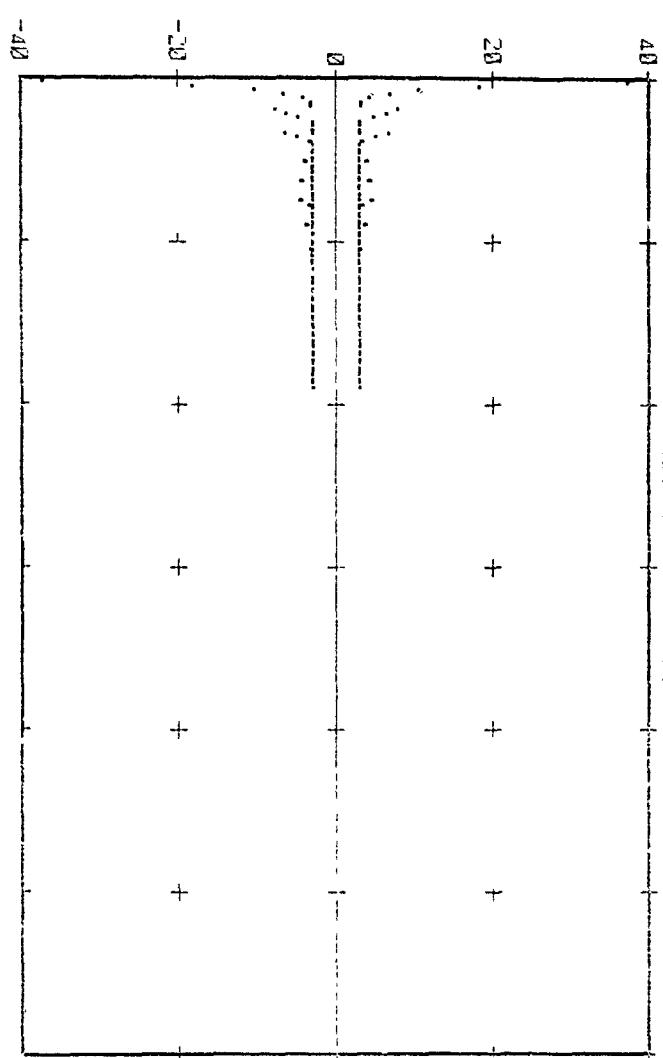
1450 11.5 1530 1550

LRHPP

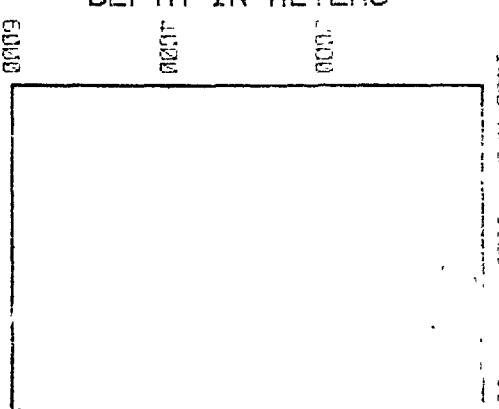
DB LOSS



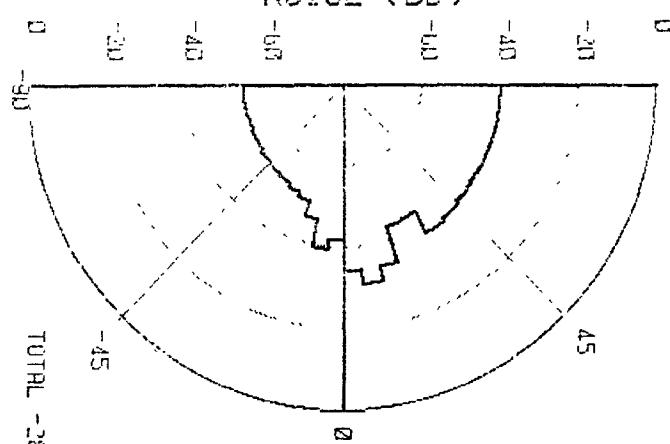
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -28.1 dB

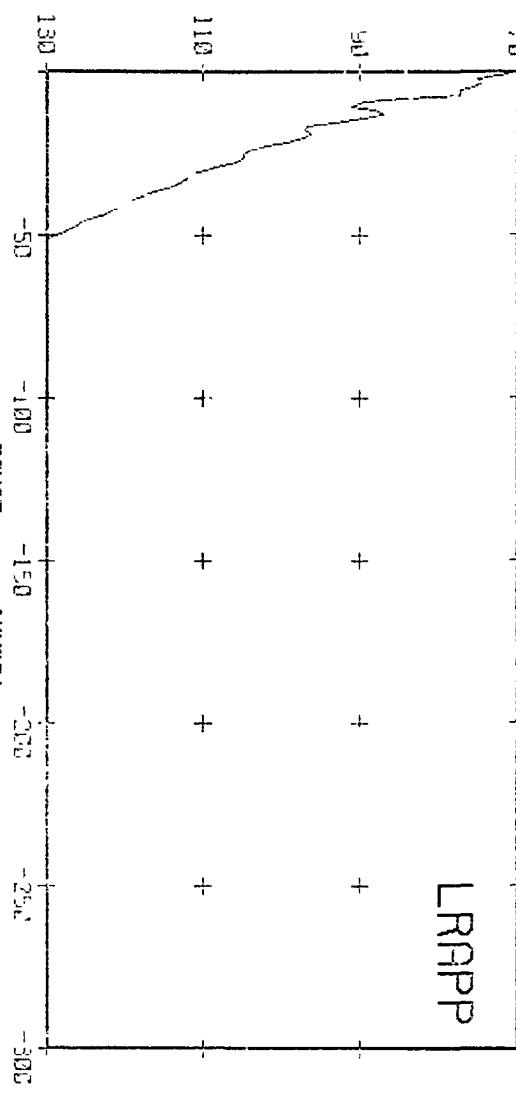
FIRE 3H SHOWER

S 233 R 64 F 150

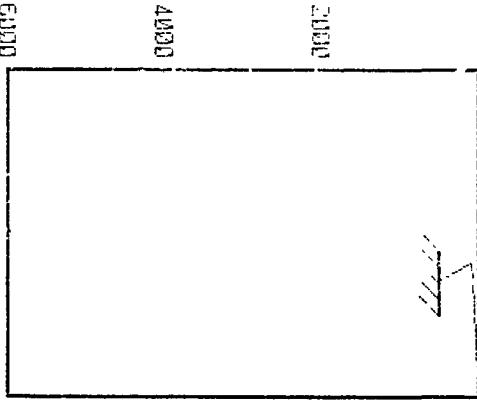
1450 115 1500 1550

LRAPP

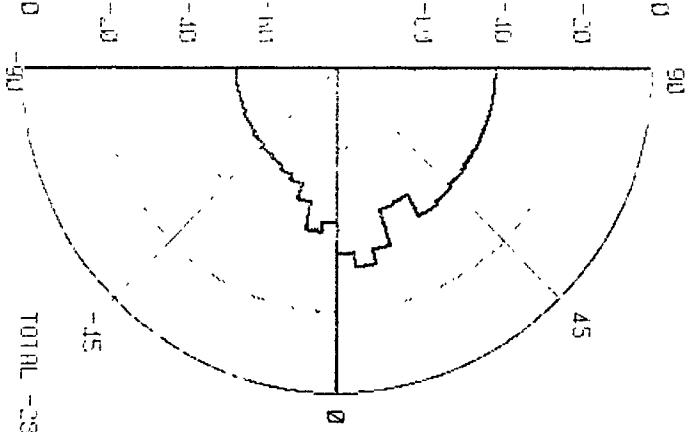
DB LOSS



DEPTH IN METERS



NOISE (DB)



70

ARR 3A SUMMER

S 20 R 133 F 150

1450

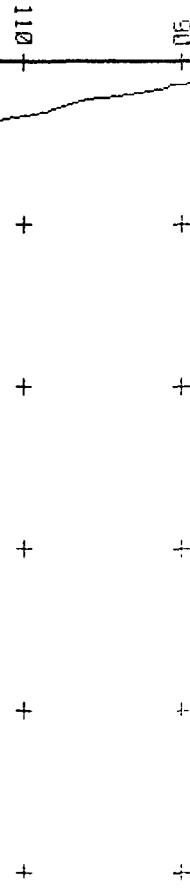
115

1500

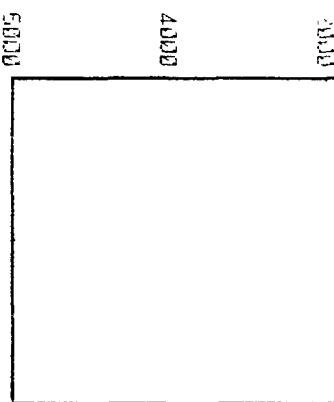
1550

LRAPP

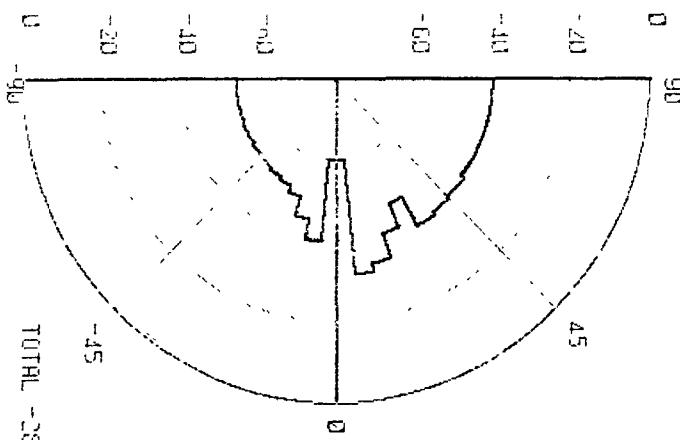
DB LOSS



DEPTH IN METERS



NOISE (DB)



70

AREA 3A SUMMER

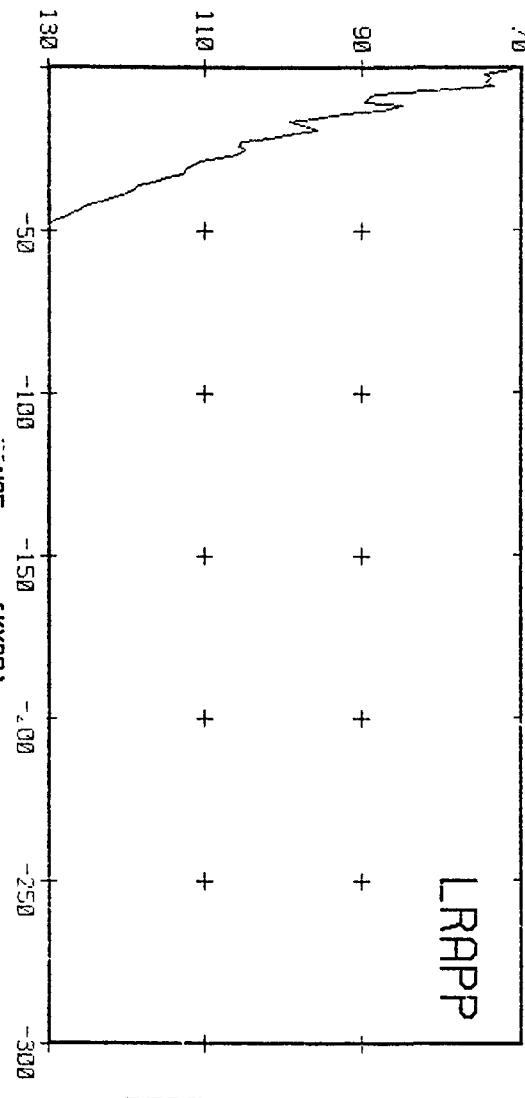
S 58 R 133 F 150

1450 W/S 1500 1550

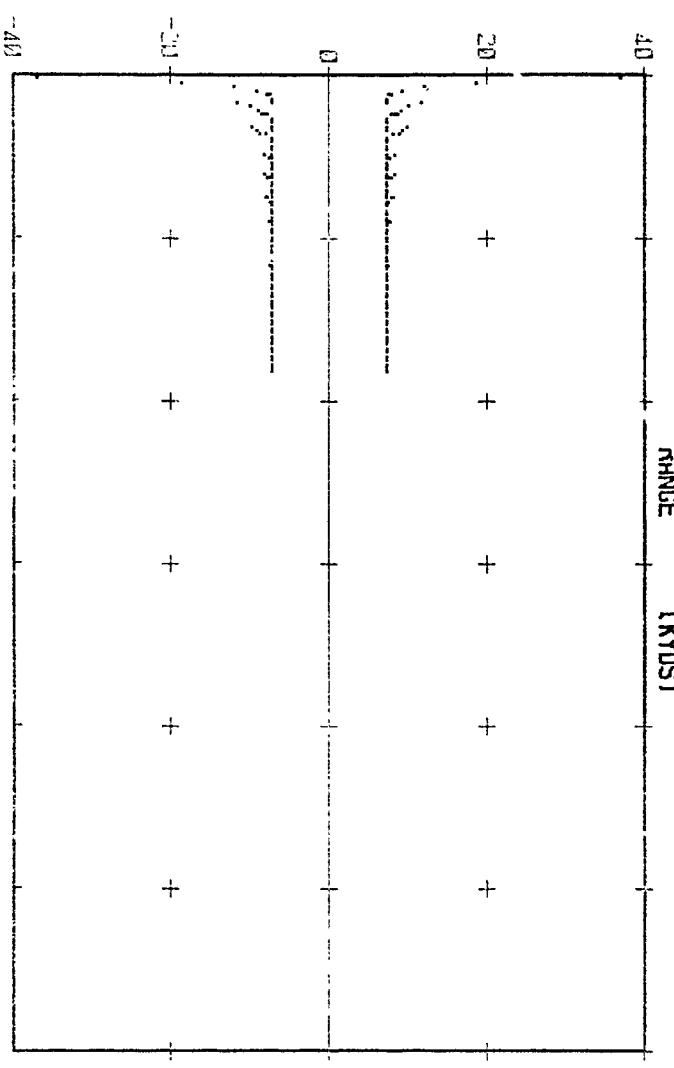
LRAAPP

7777

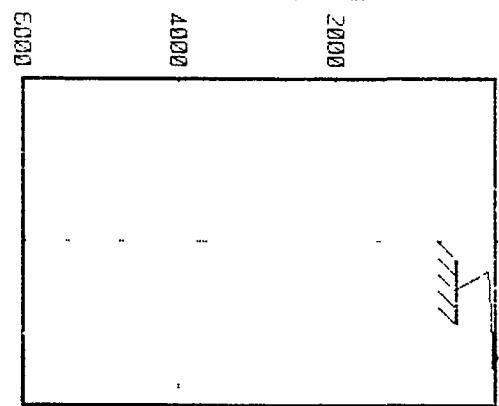
DB LOSS



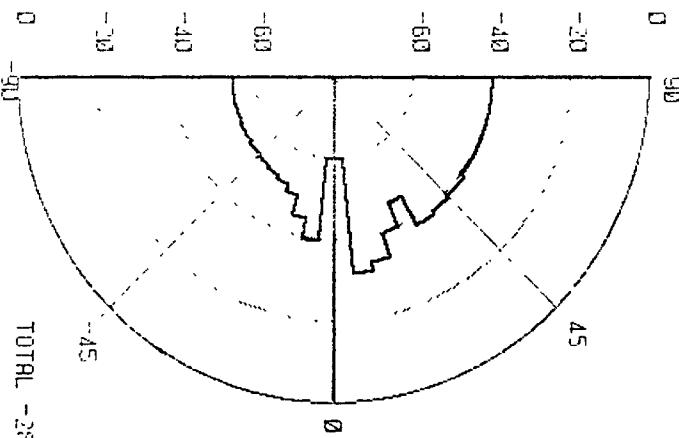
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -28.9 DB

70

AREA 3A SUMMER

S 233 R 133 F 158

1450 M/S 1500 1550

LRAPP

DB LOSS

90

+ + + + +

2000

5000

4000

130
110
90
70
50
30
10

-130 -110 -90 -70 -50 -30 -10

RANGE

(KMS)

ARRIVAL ANGLE

40
20
0
-20
-40
-60
-80
-100

+ + + + +

+

+

+

+

+

+

-

DEPTH IN METERS

2000

5000

4000

3000

2000

1000

0

5000

4000

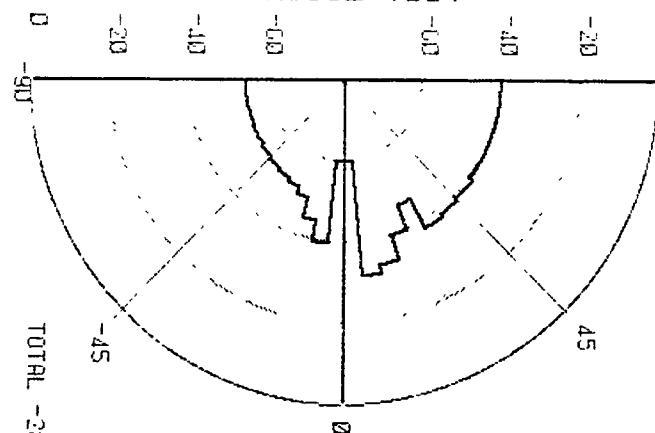
3000

2000

1000

0

NOISE (DB)



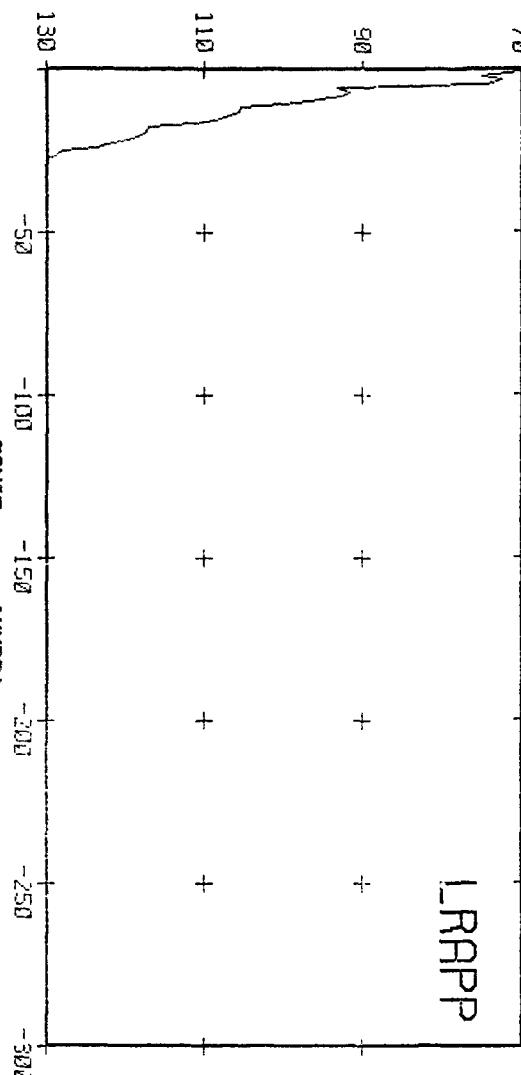
AREA 3A SUMMER

S 20 R 262 F 150

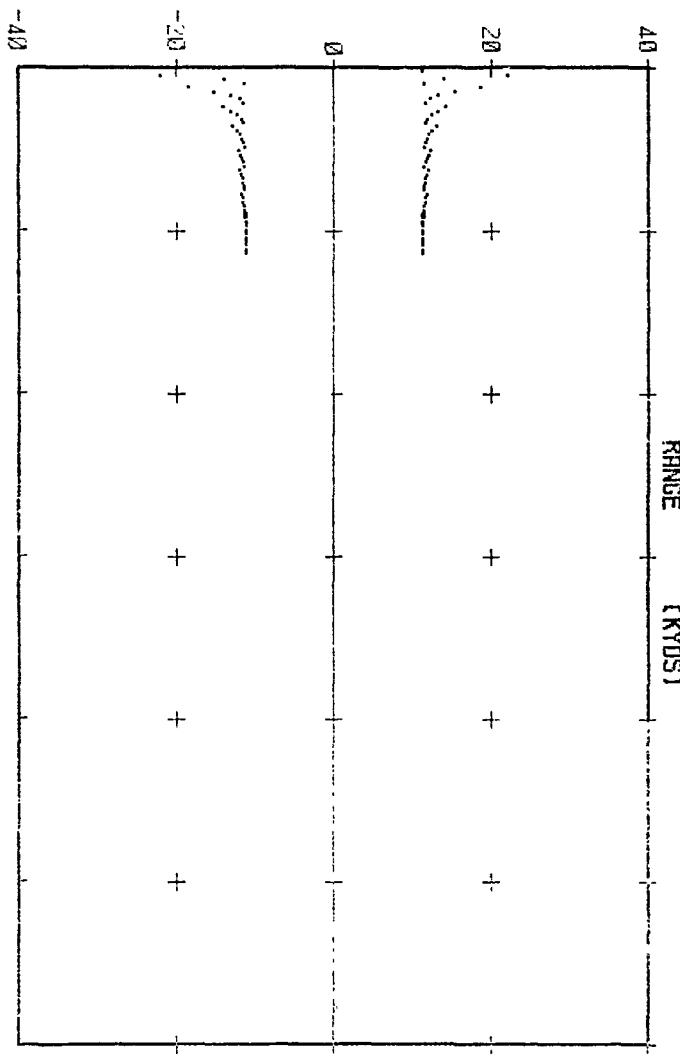
1450 M/S 1500 1550

LRRAPP

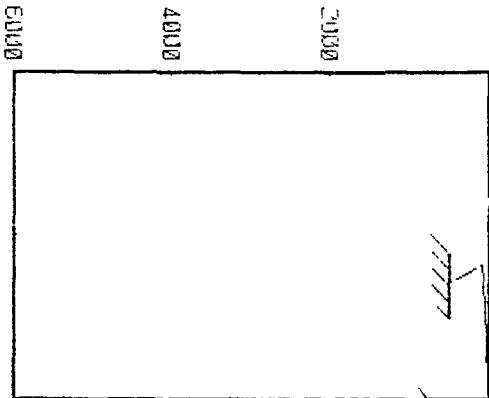
DB LOSS



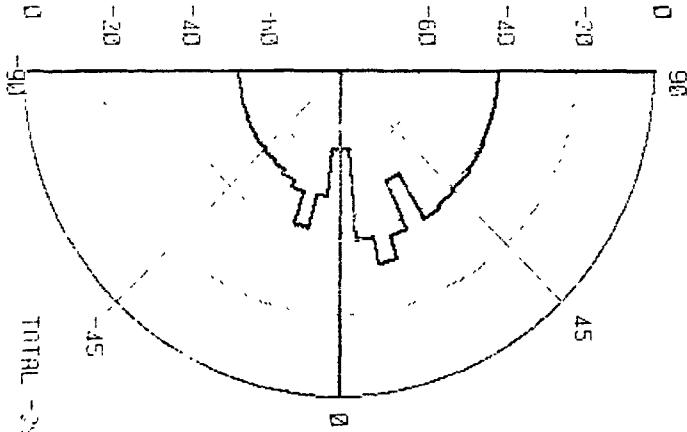
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



Total -29.5 dB

70

ARR 3A SUMMER

S 50 R 262 F 150

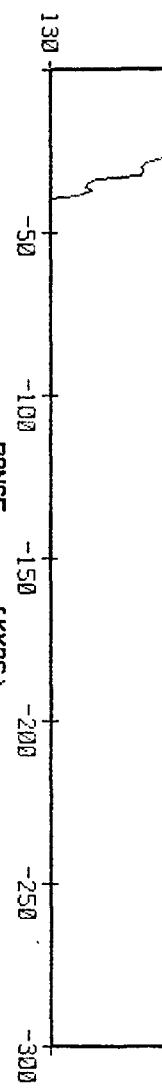
1450 M/S

1500

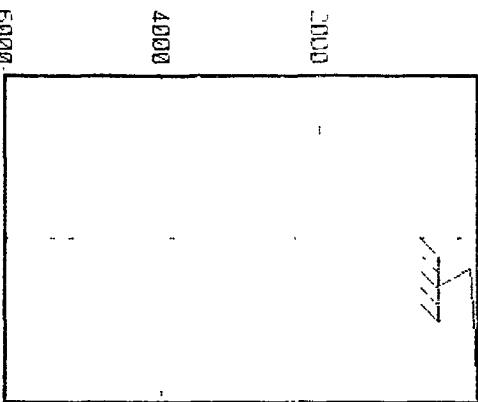
1550

LRAPP

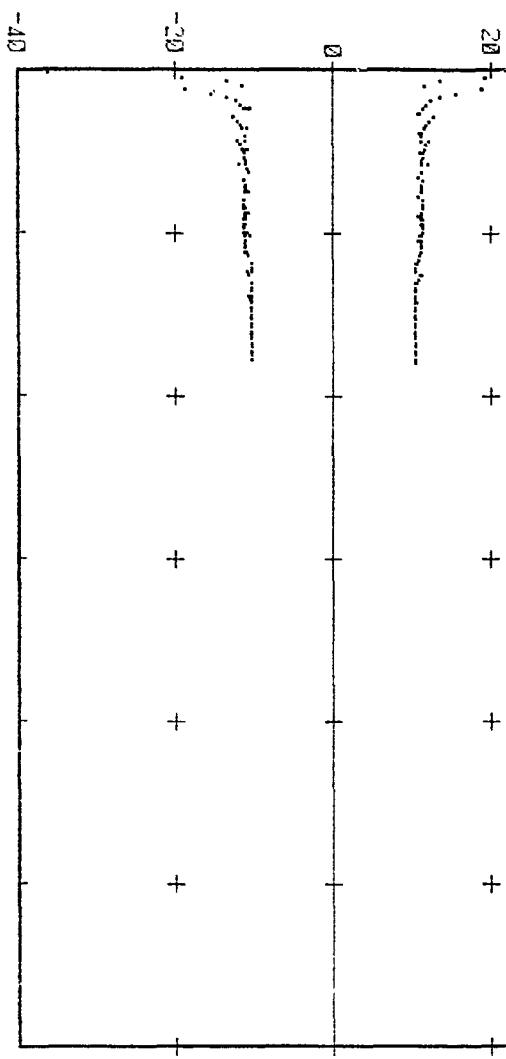
DB LOSS



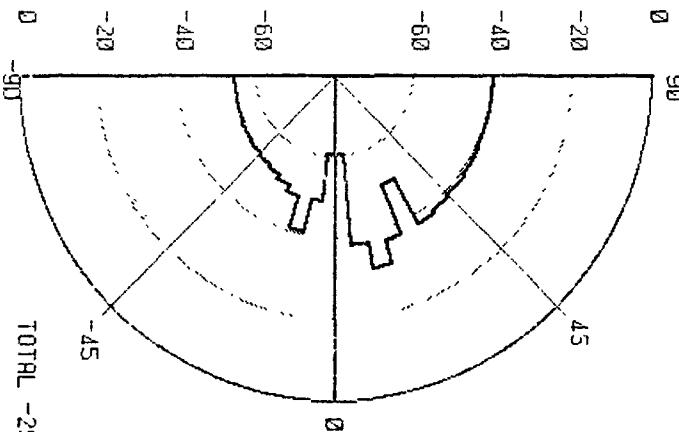
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -29.6 DS

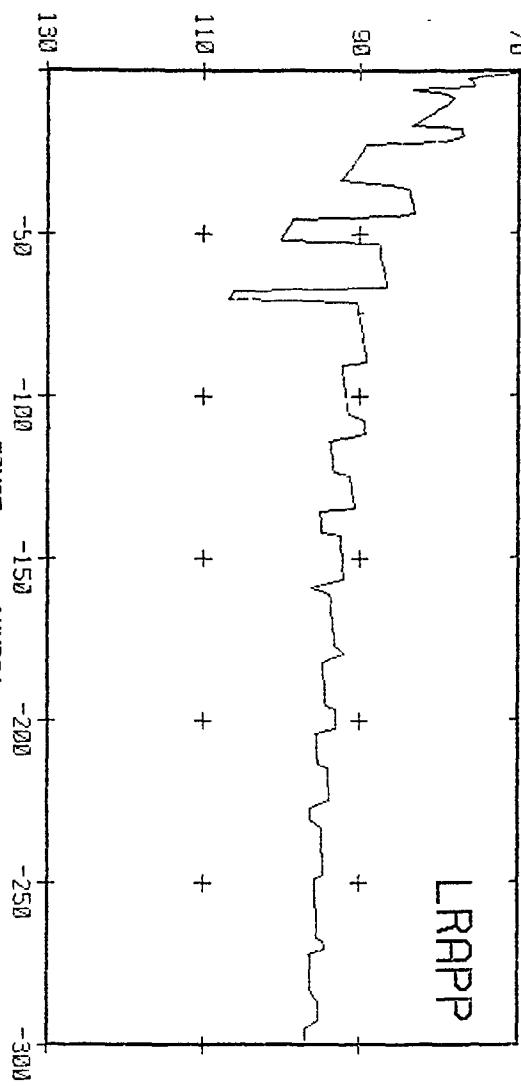
AREA 3A SUMMER

S 233 R 262 F 150

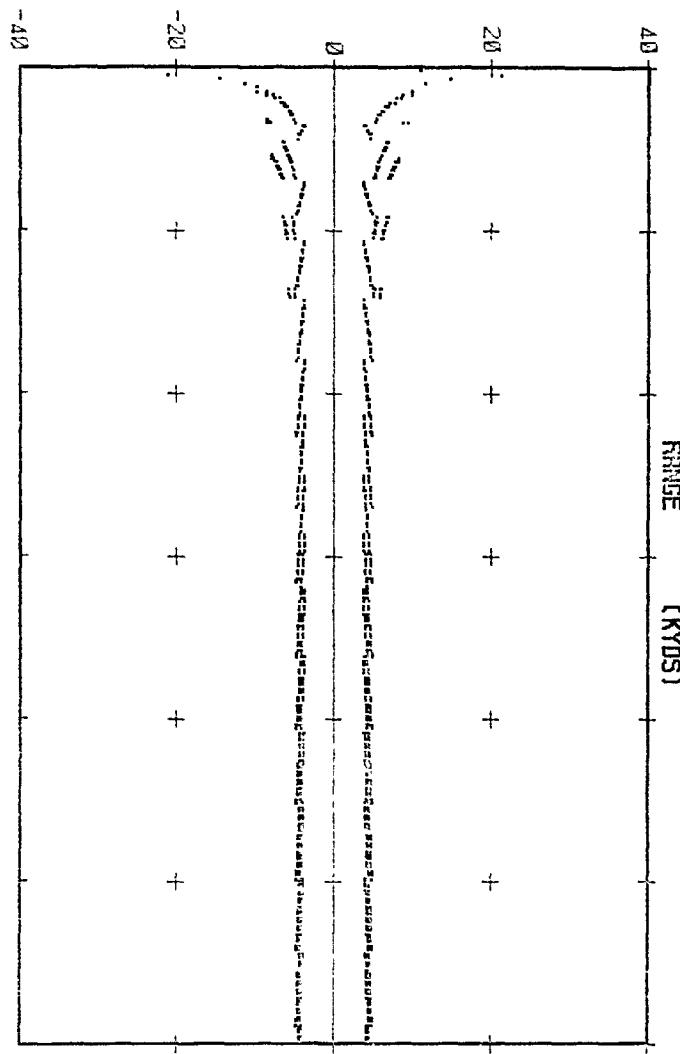
1450 M/S 1500 1550

LRAPP

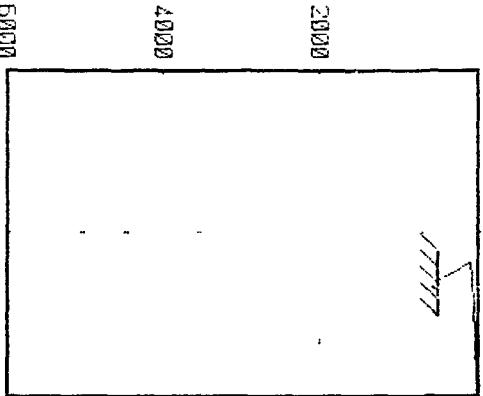
DB LOSS



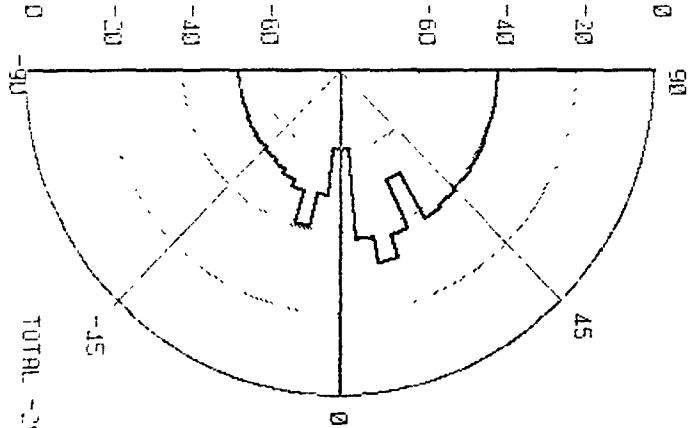
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

AREA 3A SUMMER

S 20 R 300 F 150

1450 M/S 1500 1550

LRAPP

DB LOSS

110

90

70

50

30

10

0

130
110
90
70
50
30
10
0

-100 -150 -200 -250

40

ARRIVAL ANGLE

20

0

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

-280

-300

-320

-340

-360

-380

-400

-420

-440

-460

-480

-500

-520

-540

-560

-580

-600

-620

-640

-660

-680

-700

-720

-740

-760

-780

-800

-820

-840

-860

-880

-900

-920

-940

-960

-980

-1000

-1020

-1040

-1060

-1080

-1100

-1120

-1140

-1160

-1180

-1200

-1220

-1240

-1260

-1280

-1300

-1320

-1340

-1360

-1380

-1400

-1420

-1440

-1460

-1480

-1500

-1520

-1540

-1560

-1580

-1600

-1620

-1640

-1660

-1680

-1700

-1720

-1740

-1760

-1780

-1800

-1820

-1840

-1860

-1880

-1900

-1920

-1940

-1960

-1980

-2000

-2020

-2040

-2060

-2080

-2100

-2120

-2140

-2160

-2180

-2200

-2220

-2240

-2260

-2280

-2300

-2320

-2340

-2360

-2380

-2400

-2420

-2440

-2460

-2480

-2500

-2520

-2540

-2560

-2580

-2600

-2620

-2640

-2660

-2680

-2700

-2720

-2740

-2760

-2780

-2800

-2820

-2840

-2860

-2880

-2900

-2920

-2940

-2960

-2980

-3000

DEPTH IN METERS

0

2000

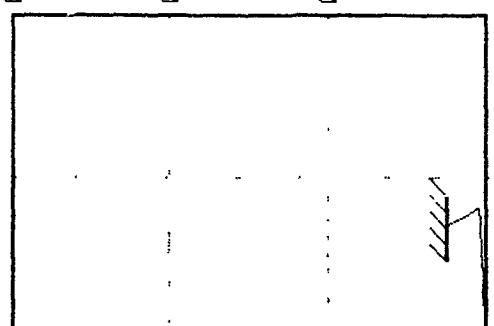
4000

6000

8000

9000

0

NOISE (DB)
TOTAL -29.6 DB

AREA 3A SUMMER

S 50 R 303 F 150

1450 M/S 1500 1550

LRRPP

DB LOSS

70

30
+ + + + +

110

-50 -100 -150 -200 -250 -300

RANGE (KMS)

6000

DEPTH IN METERS

2000
4000
6000

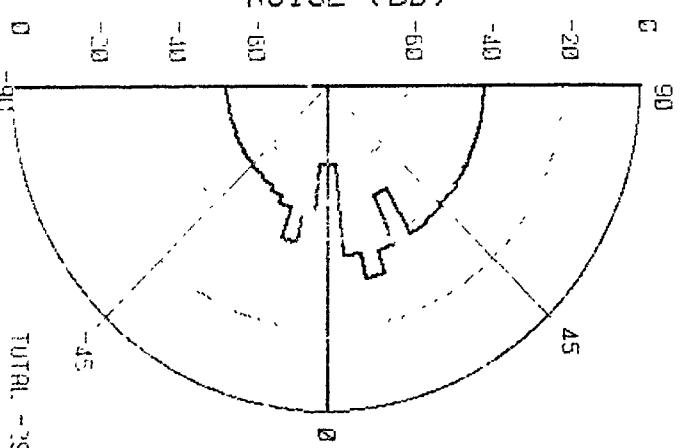
0 20 40 60

ARRIVAL ANGLE

-20 + + + + + +

-40

NOISE (DB)



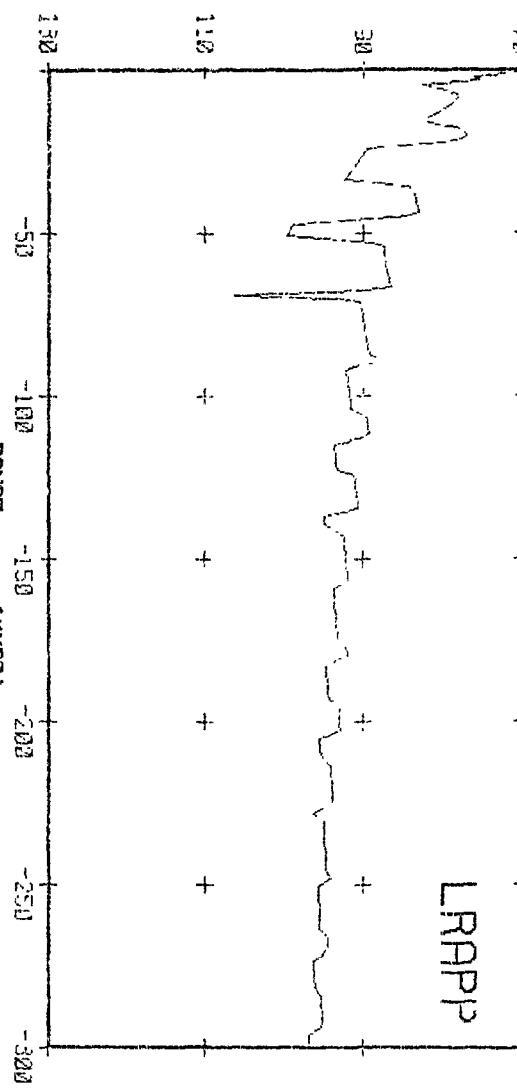
74

AREA 54 SUMMER

S 233 R 300 F 150

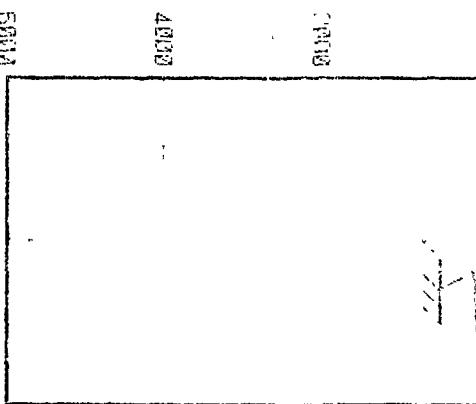
1450 11¹⁵ 1500 1550

DB LOSS

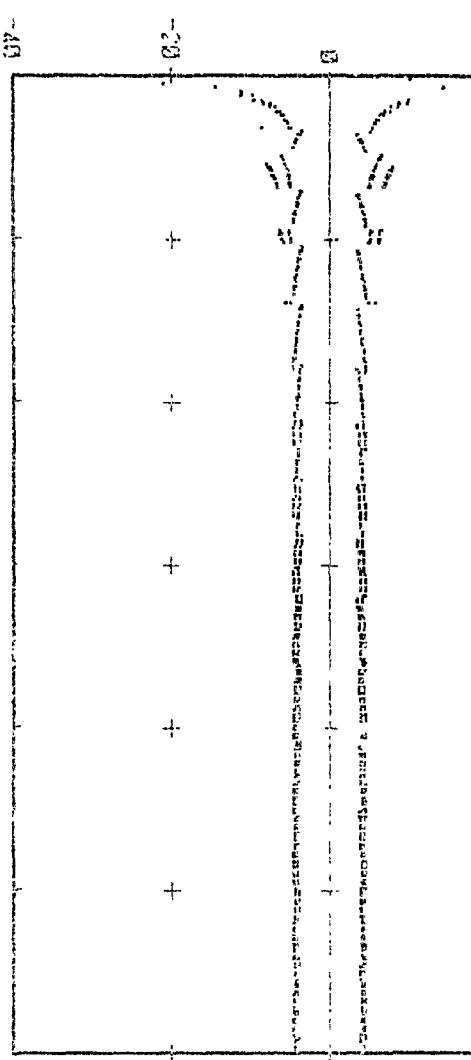


LRAPP

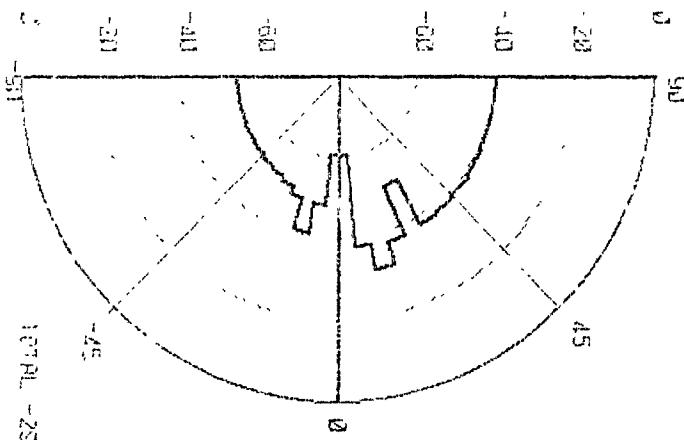
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



NORTH - 23.5 DEG

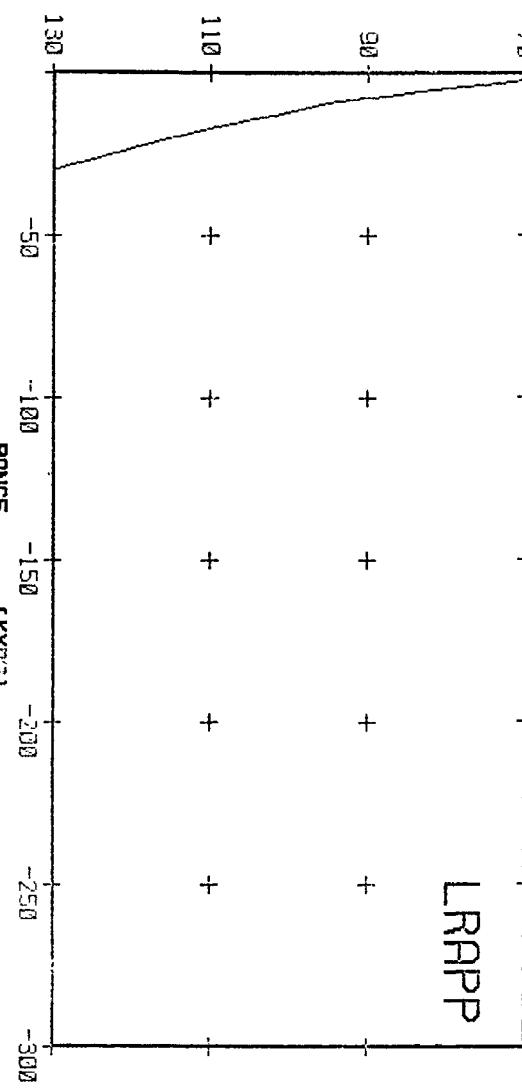
AREA 3G SUMMER

S 20° R 105° F 150

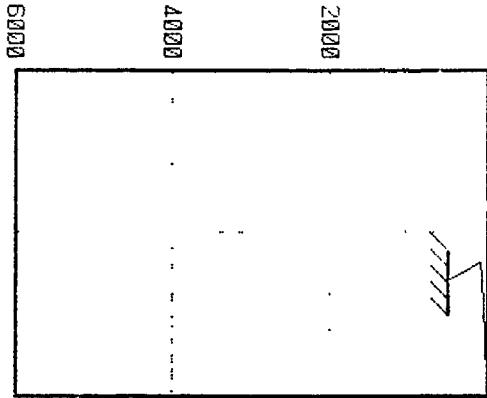
1450 M/S 1500 1550

LRAAPP

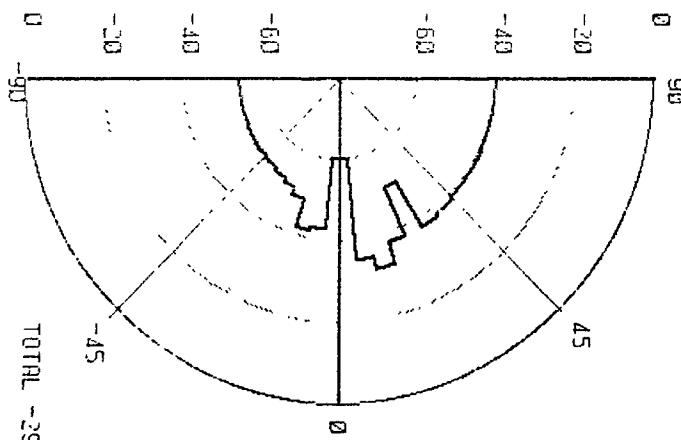
DB LOSS



DEPTH IN METERS



NOISE (DB)



70

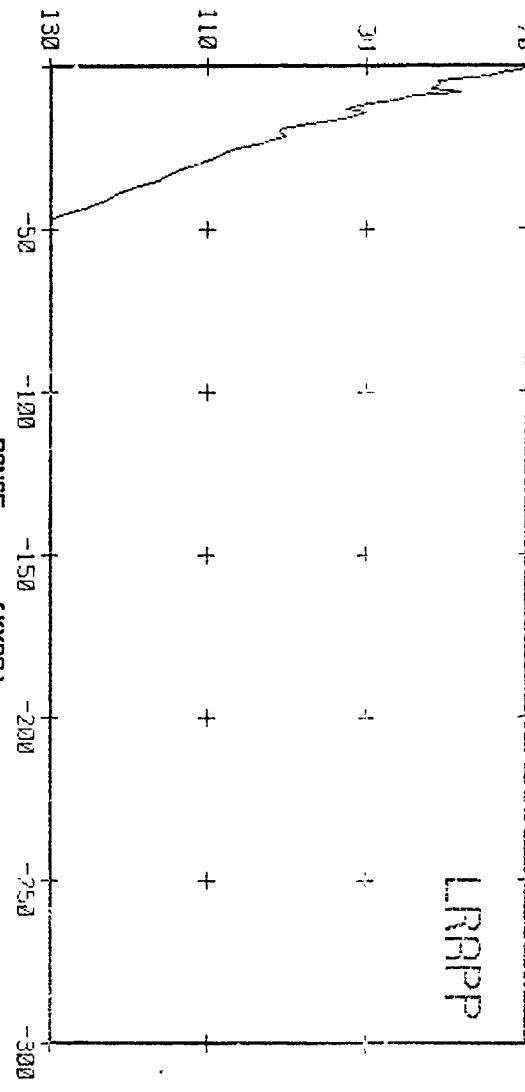
AREA 39 SHIP

S 59 R 160 F 150

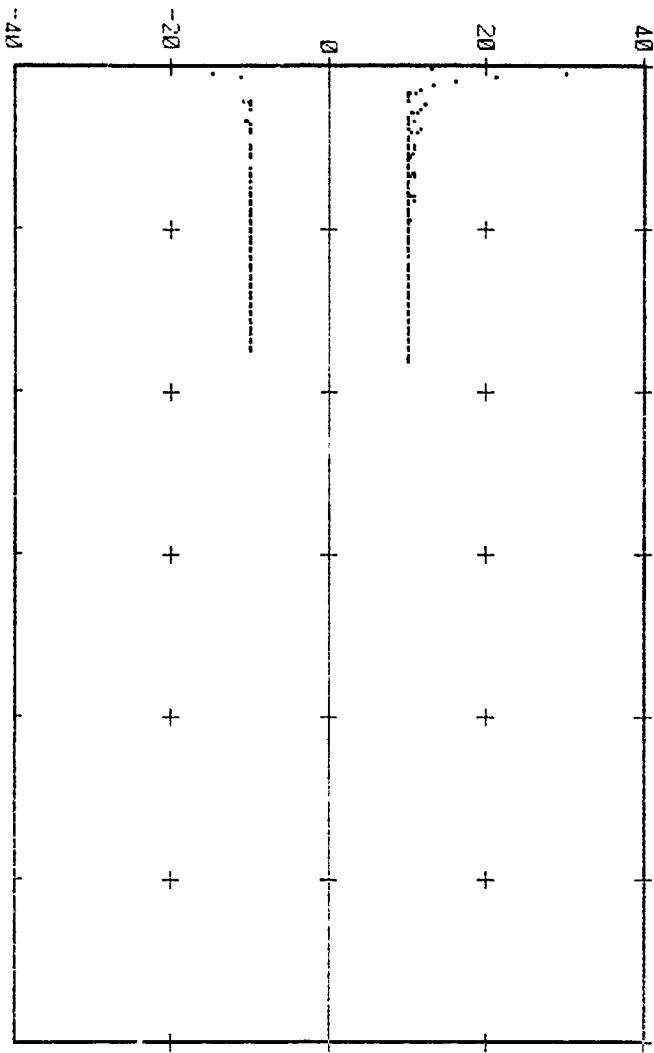
1450 115 1500 1550

LRAPP

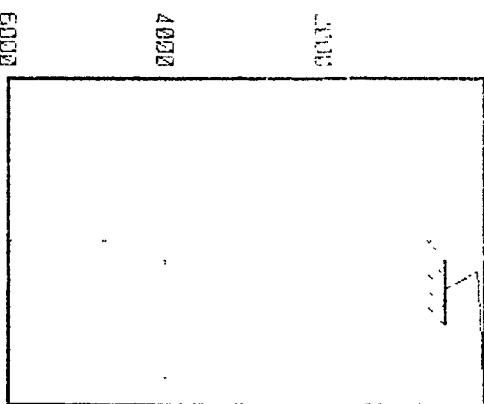
DB LOSS



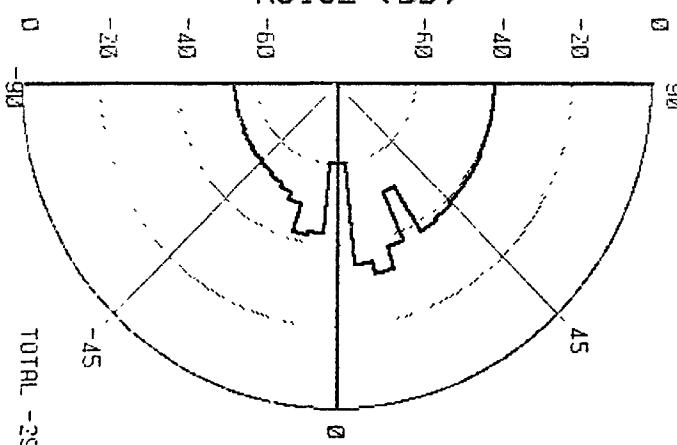
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -29.4 DB

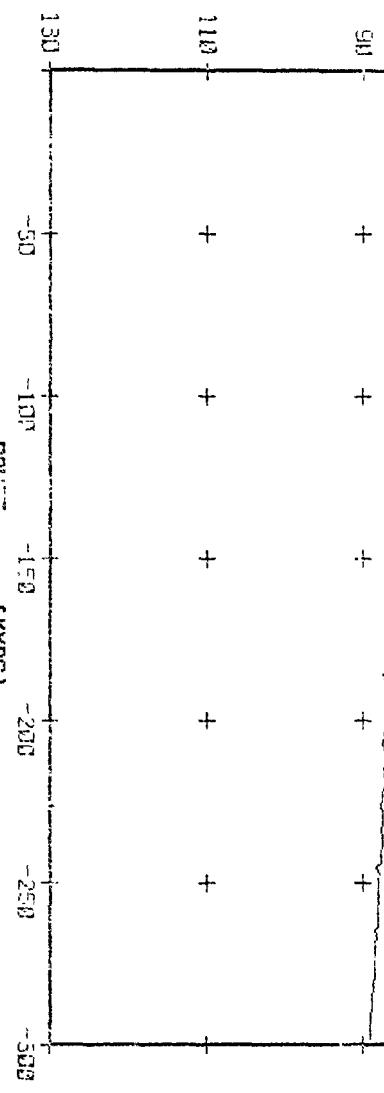
AREA 3A SUMMER

S 233 R 1000 F 150

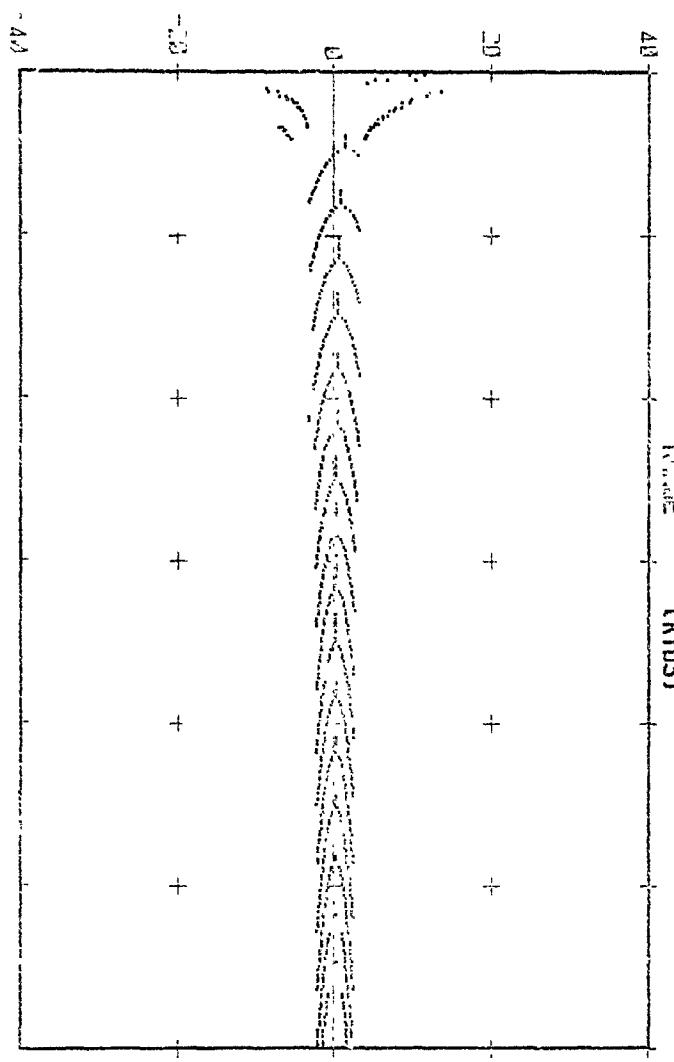
1450 M/S 1500 1550

LRAFP

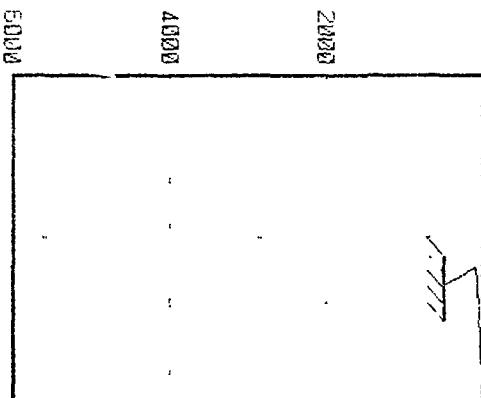
DB LOSS



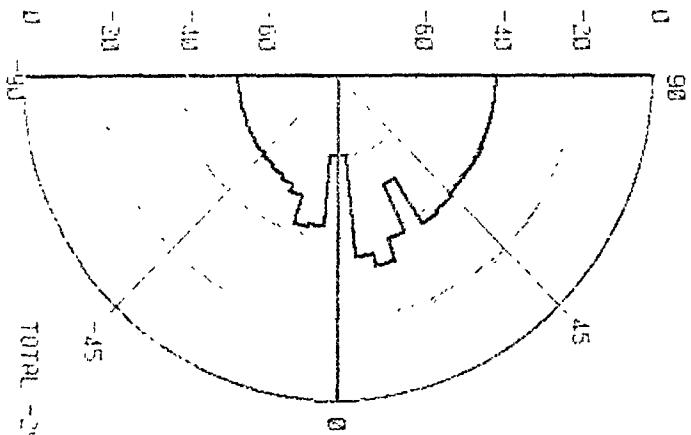
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



-44

TOTAL -29.1 dB

70

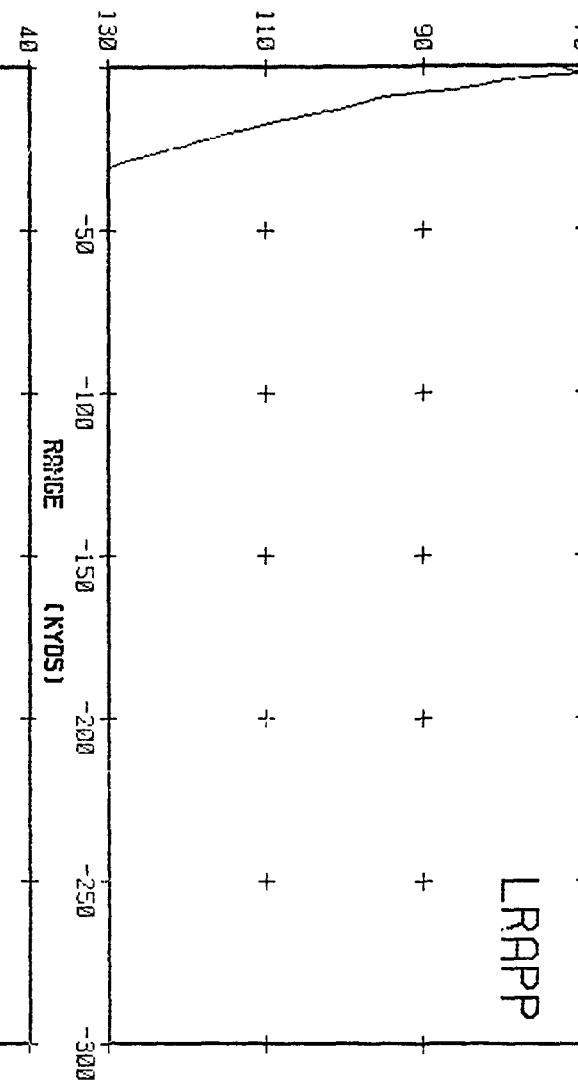
AREA 3A SUMMER

S 23 R 1500 F 150

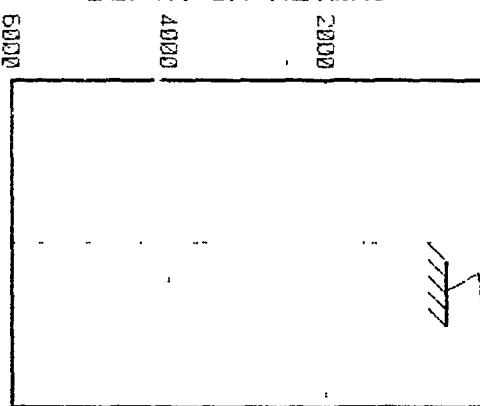
1450 M/S 1500 1550

LRAPP

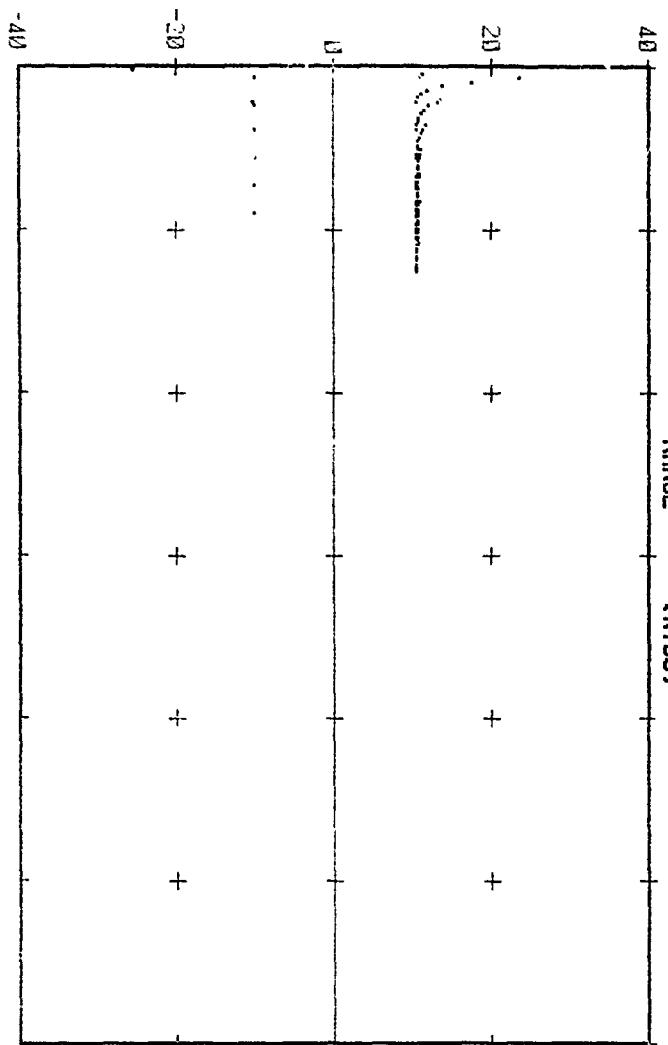
DB LOSS



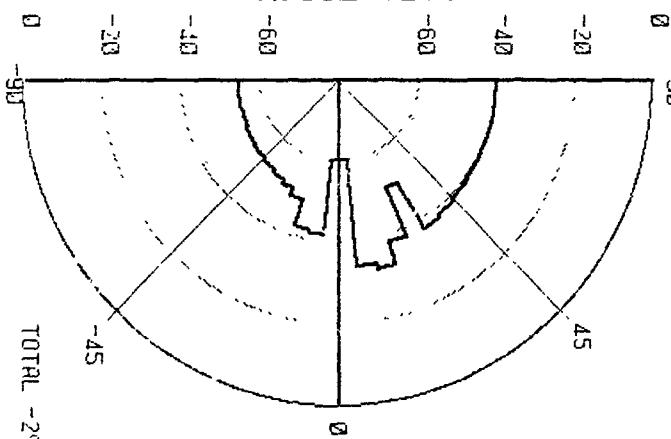
DEPTH IN METERS



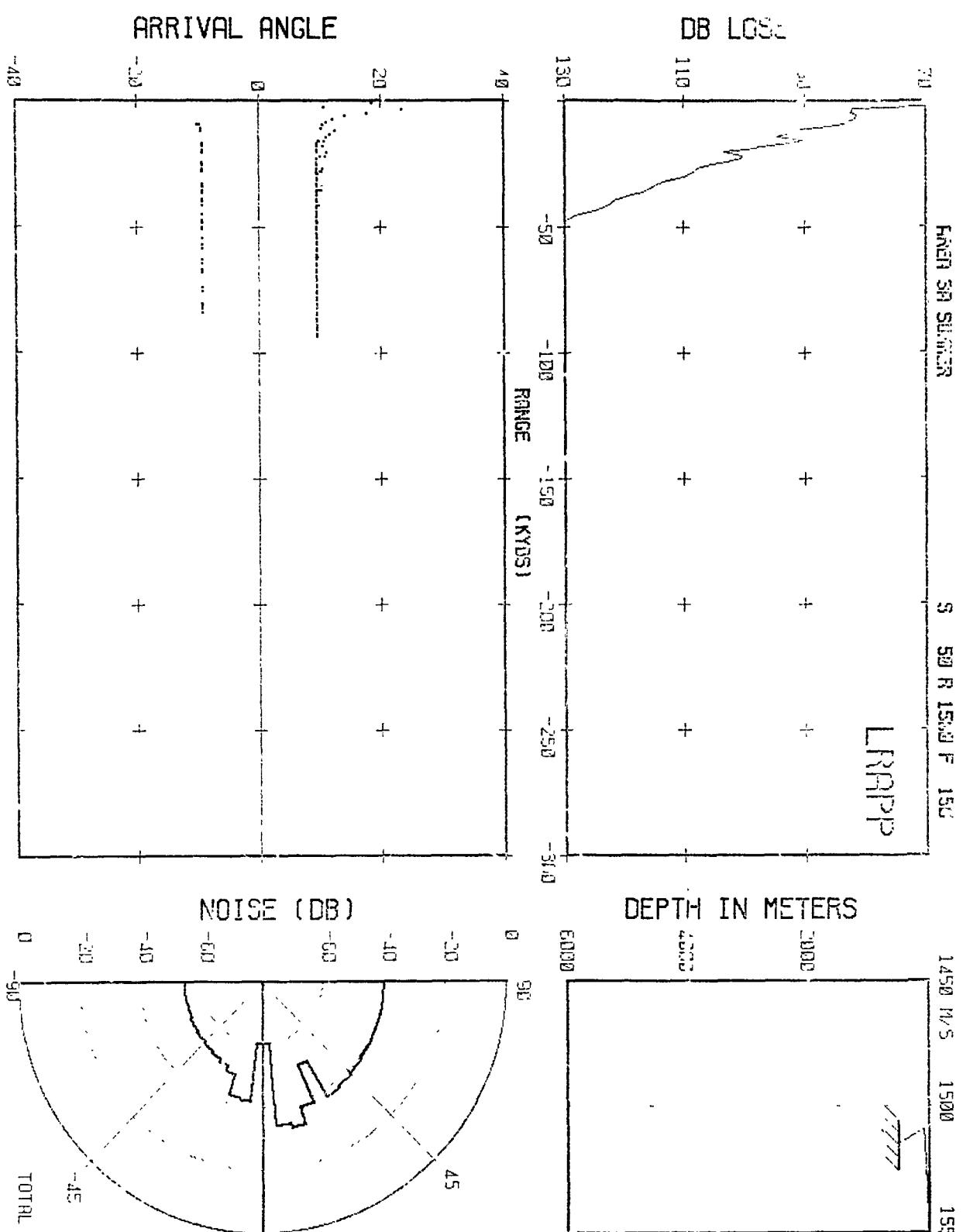
ARRIVAL ANGLE



NOISE (DB)



TOTAL -20.3 dB



70

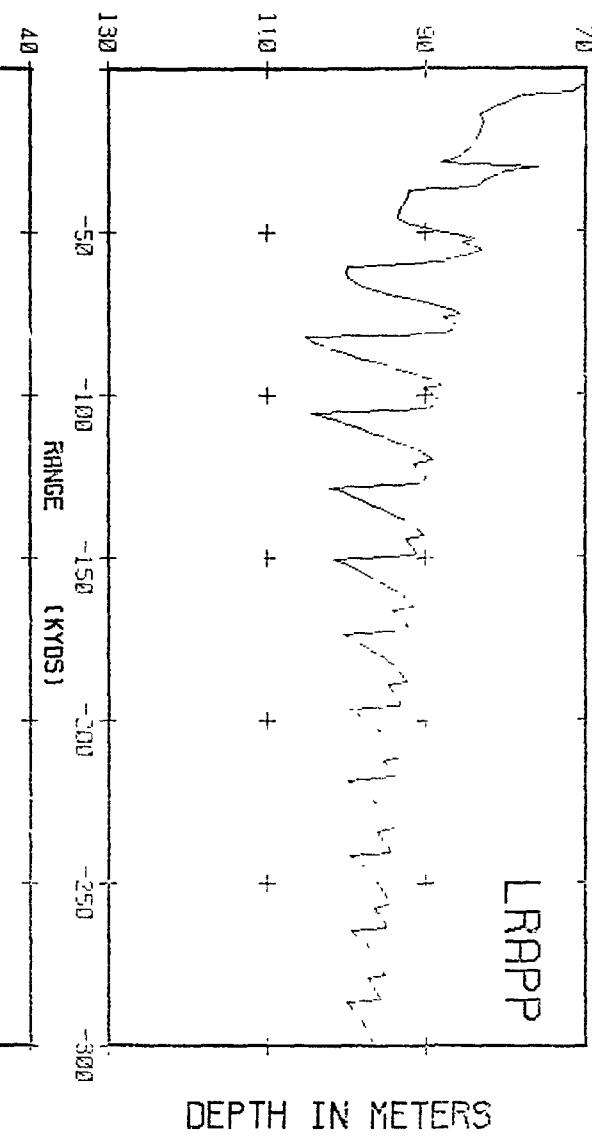
AREA 3A SUMMER

S 233 R 150 F 150

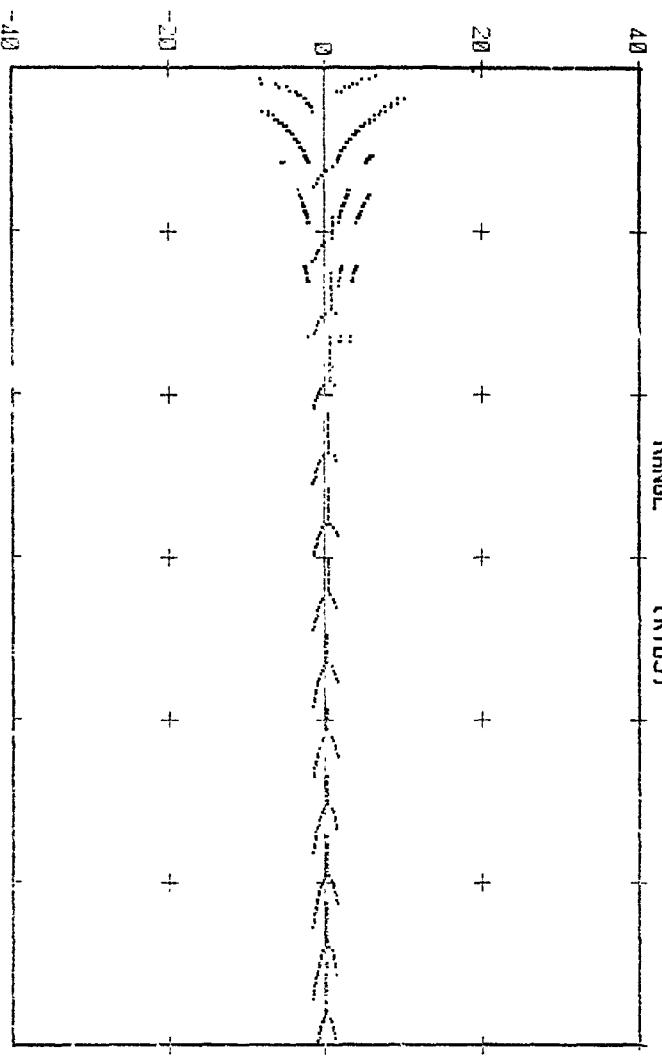
1450 M/S 1500 1550

LRAPP

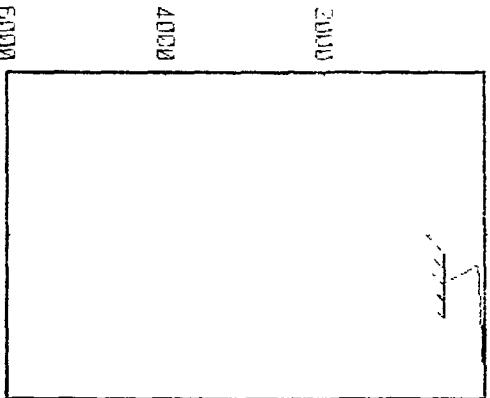
DB LOSS



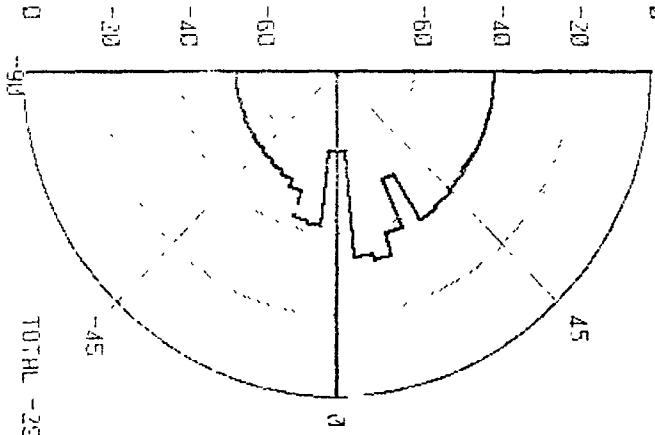
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



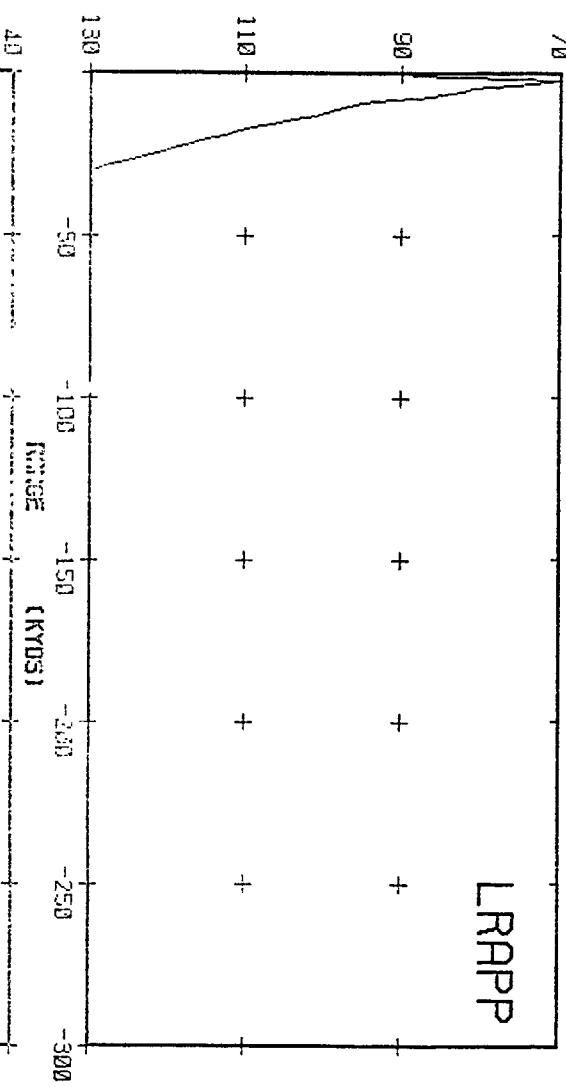
AREA 3A SUMMER

S 20 R 1640 F 150

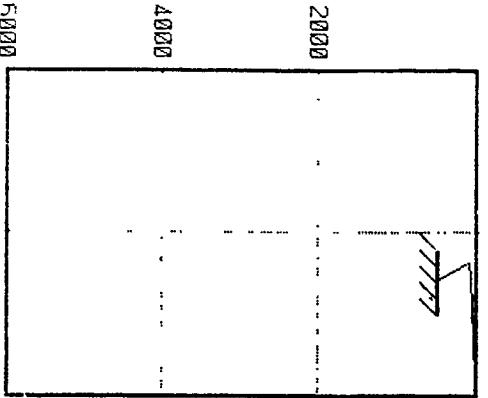
1450 M/S 1500 1550

LRAAPP

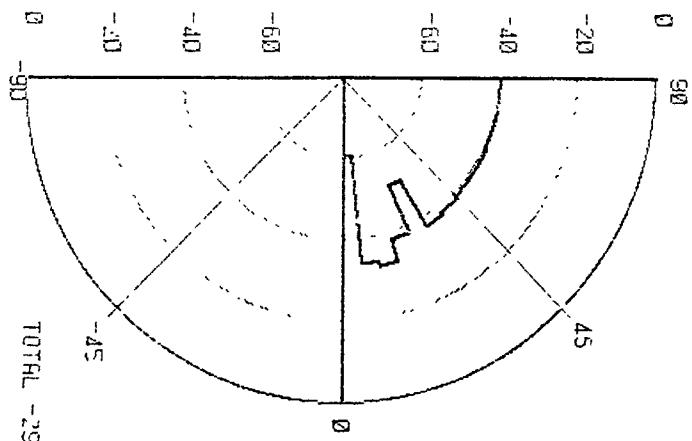
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -29.7 DB

71

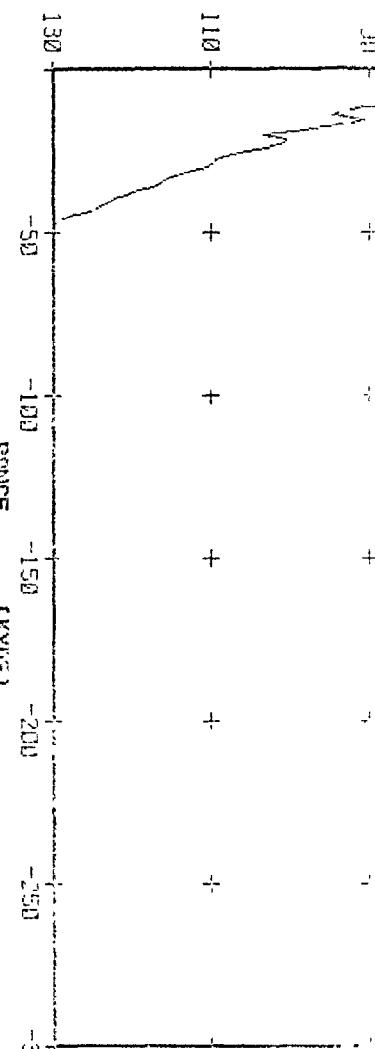
EAKER 37 SEC 74

S 53 R 1640 F 153

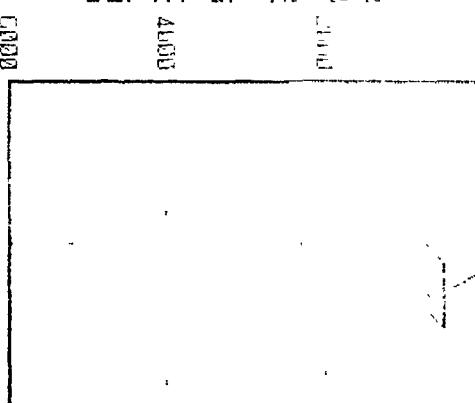
1450 115 1500 1550

LFBGDP

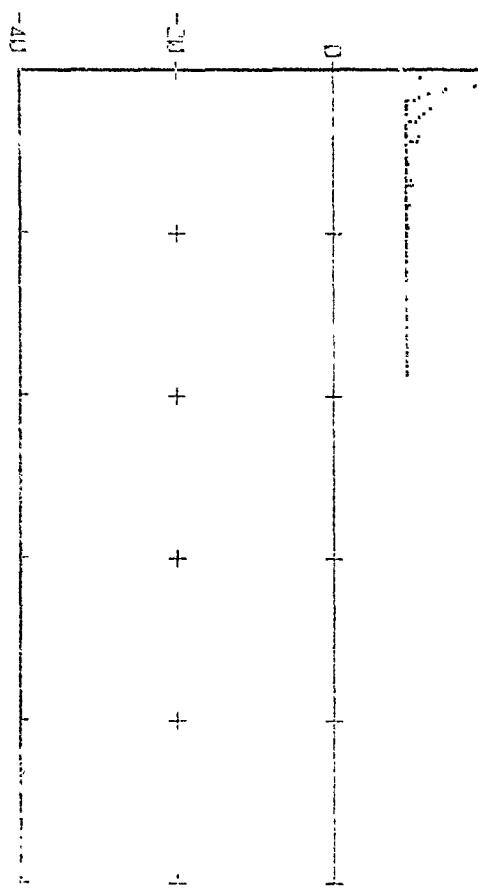
DB LOSS



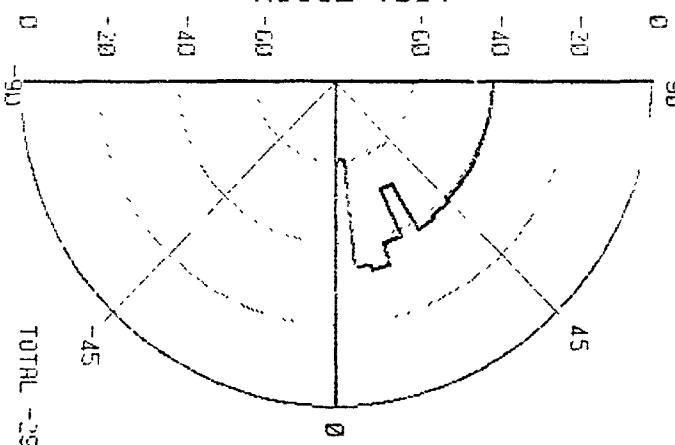
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -29.7 DB

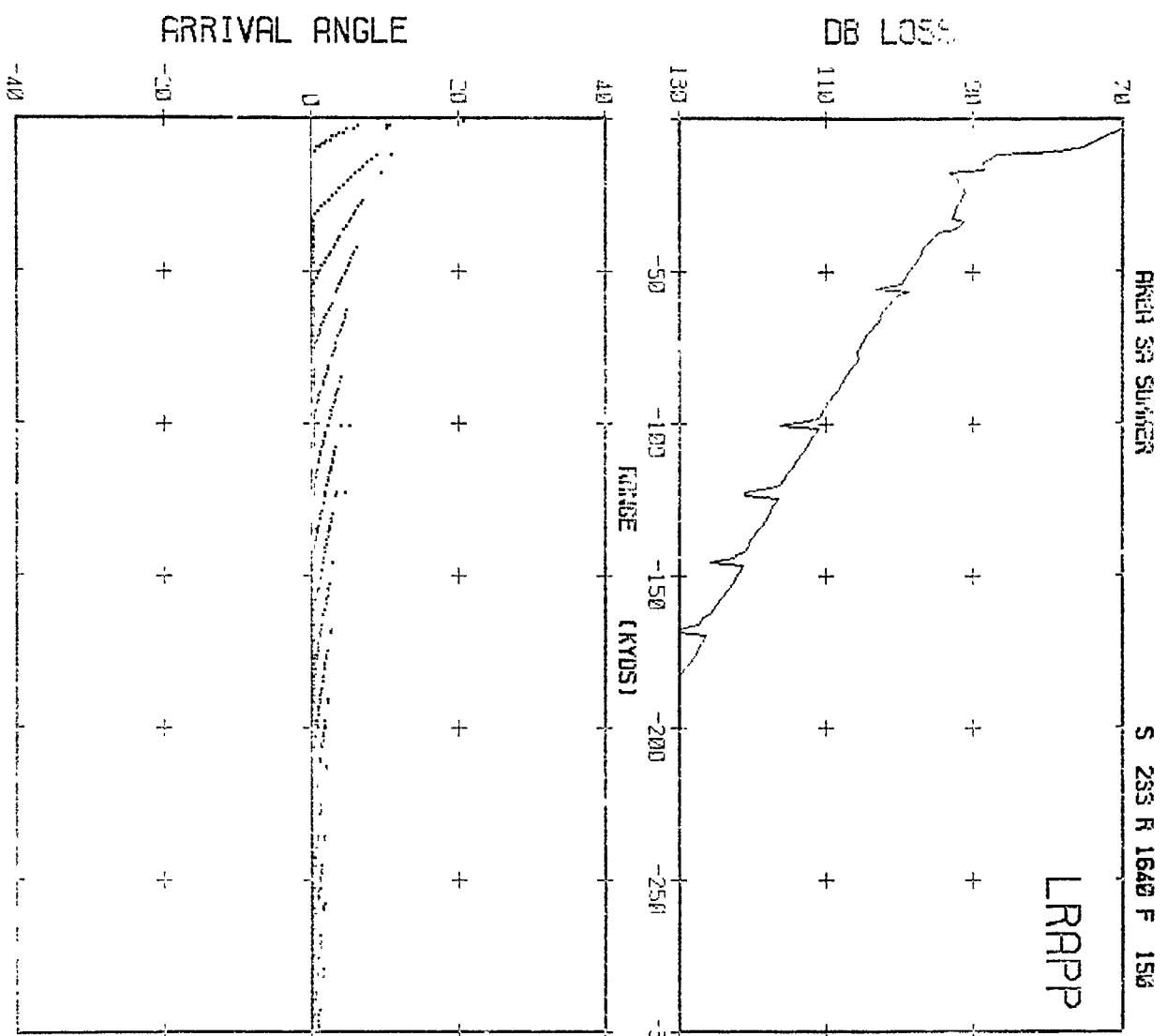
ARKEA SA SUMMER

S 25S R 1640 F 153

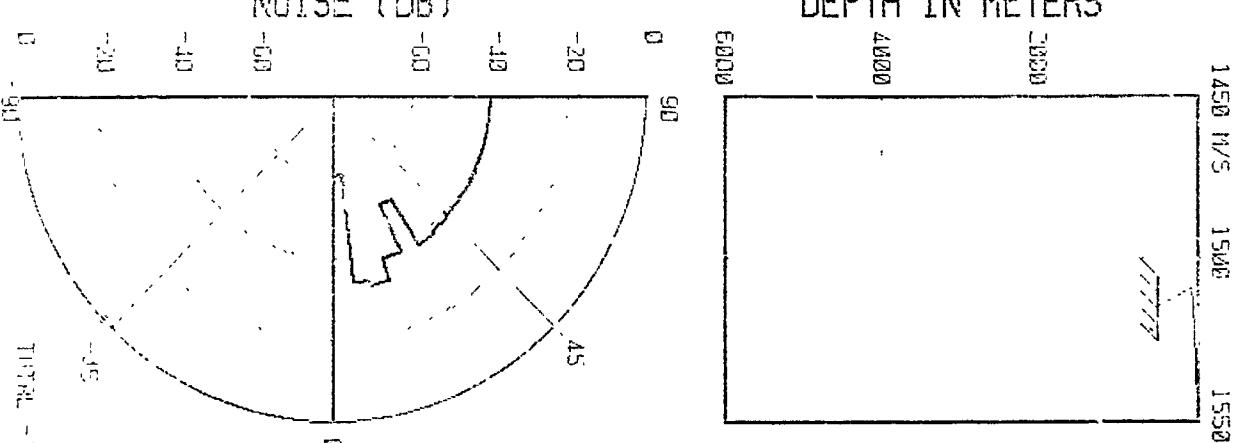
1450 H/S 1546 1550



LRAPP



DEPTH IN METERS



-40

-40

70

AREA 3A SUMMER

S 20 R 60 F 300

1450 M/S

1500

1550

LRAPP

DB LOSS

90

+

+

+

+

+

+

+

+

130
100
150
200
250
300

RANGE (KILOMETERS)

ARRIVAL ANGLE

40

+

+

+

+

+

+

+

+

+

+

DEPTH IN METERS

2000

4000

6000

NOISE (DB)

0

90

90

-20

-40

-40

-40

-60

-60

-40

+

+

+

+

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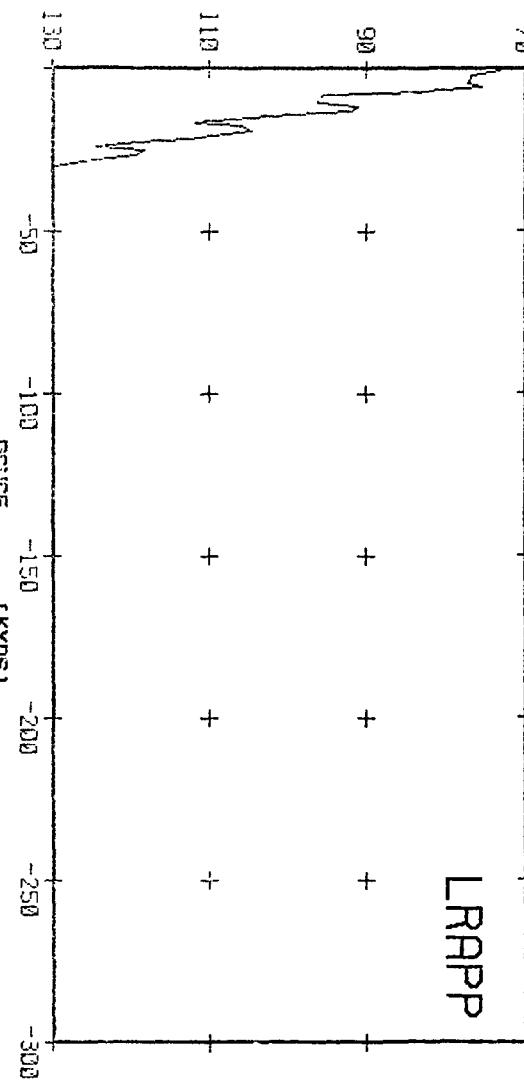
AREA 3A SUMMER

S 50 R 60 F 300

1450 M/S 1500 1550

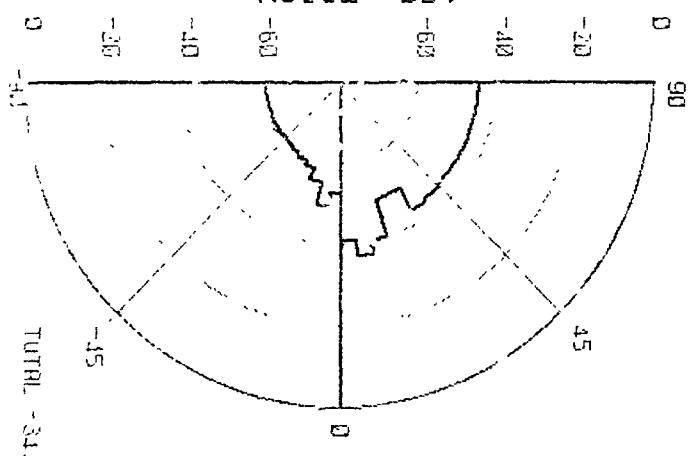
LRAAPP

DB LOSS



DEPTH IN METERS

NOISE (DB)



TOTAL - 34.5 dB

"9

AREA 3A SUMMER

S 233 R 60 F 328

1450 1/5 1500 1550

LRAPP

DB LOSS

90

+

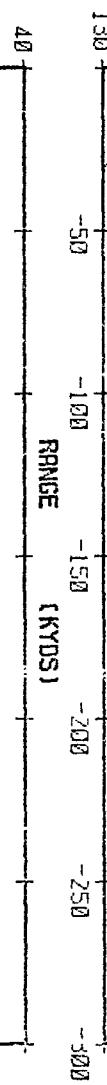
+

+

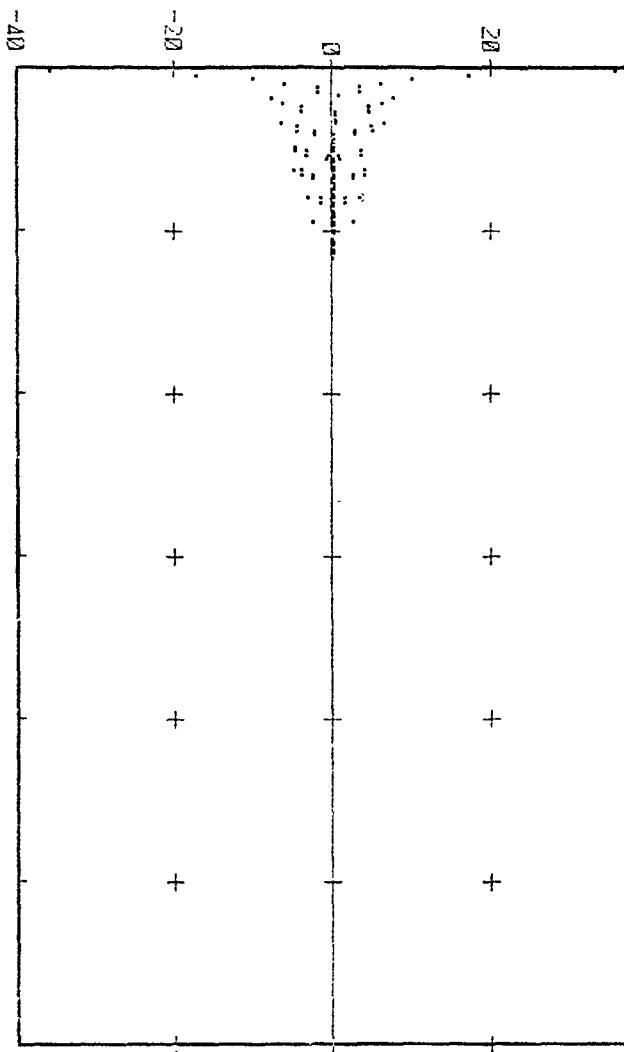
+

+

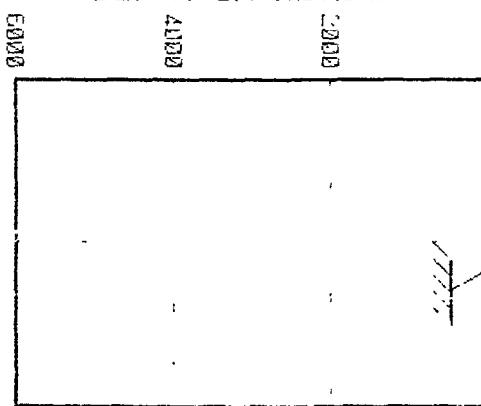
-



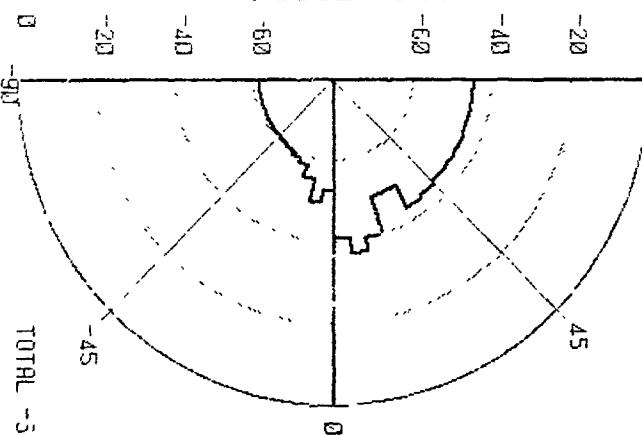
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -51.4 dB

70

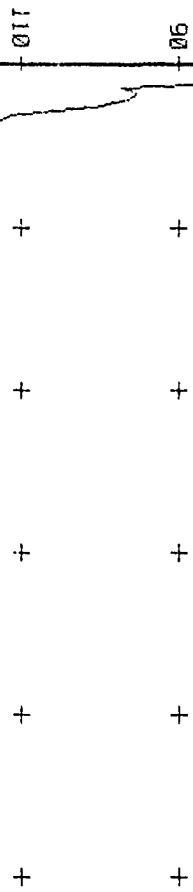
AREA 3A SUMMER

S 20 R 133 F 300

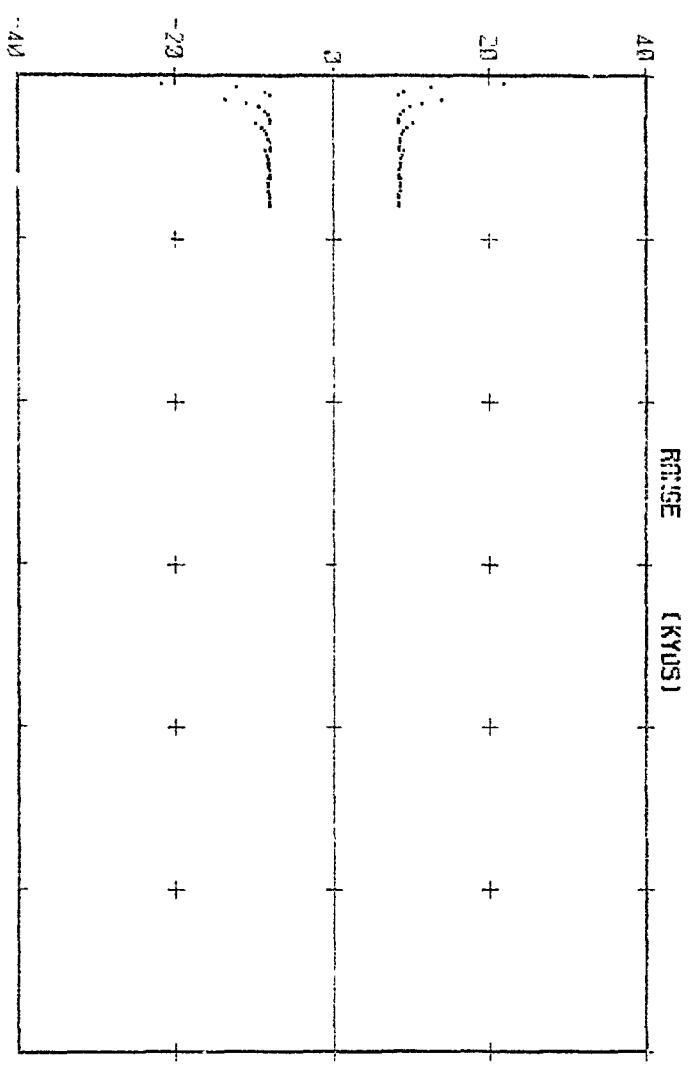
1450 M/S 1500 1550

LRAPP

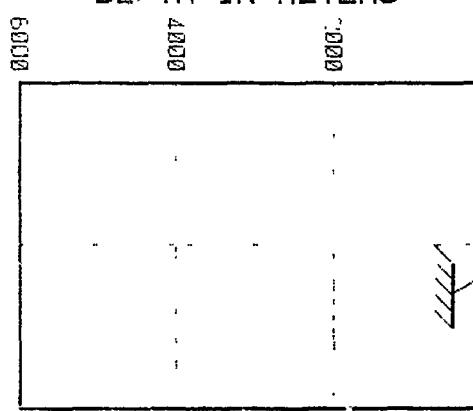
DB LOSS



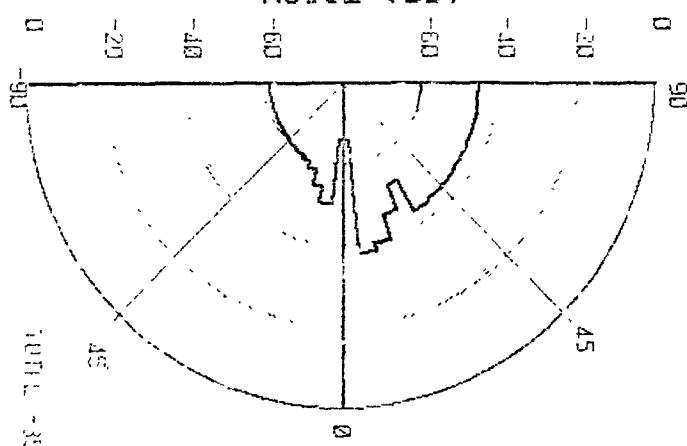
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

AREA 3A SUMMER

S 50 R 133 F 369

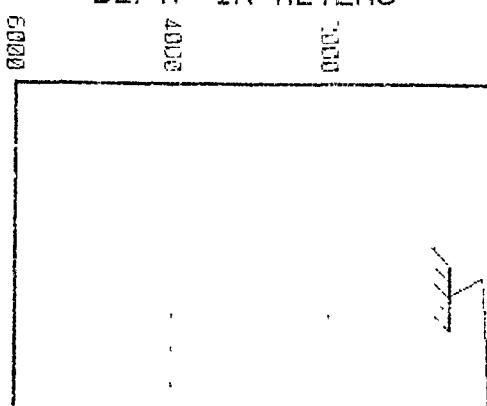
1450 145 1500 1550

LRAPP

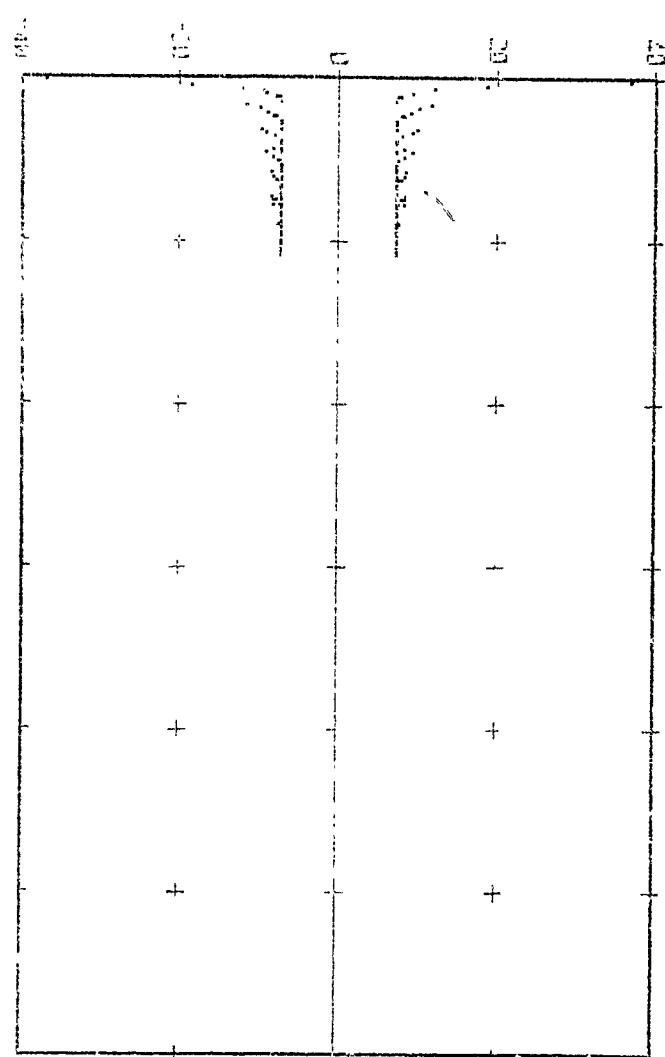
DB LOSS



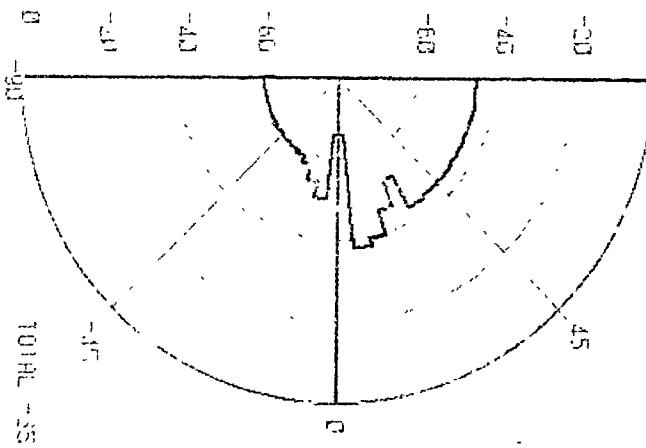
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (dB)



70

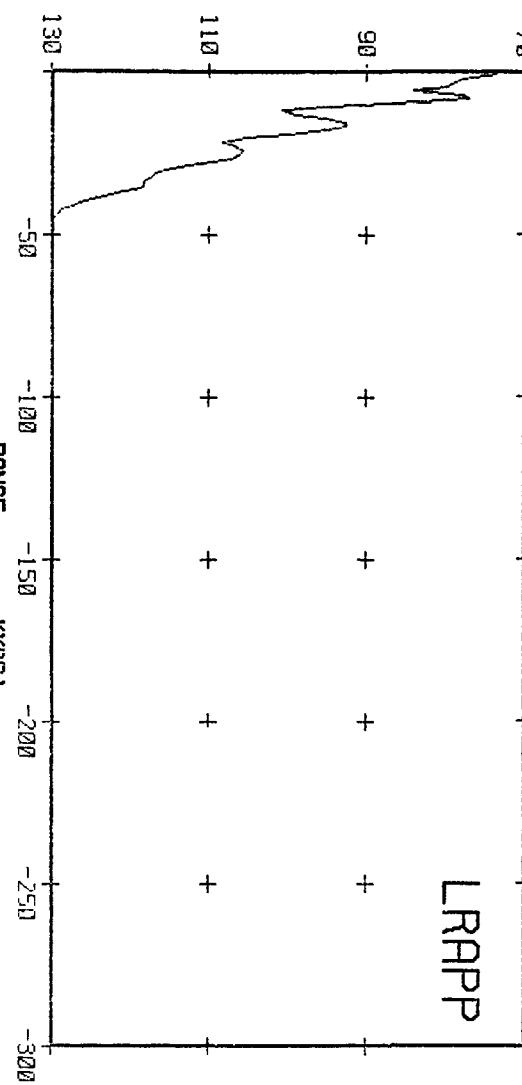
AREA 3A SUMMER

S 233 R 133 F 363

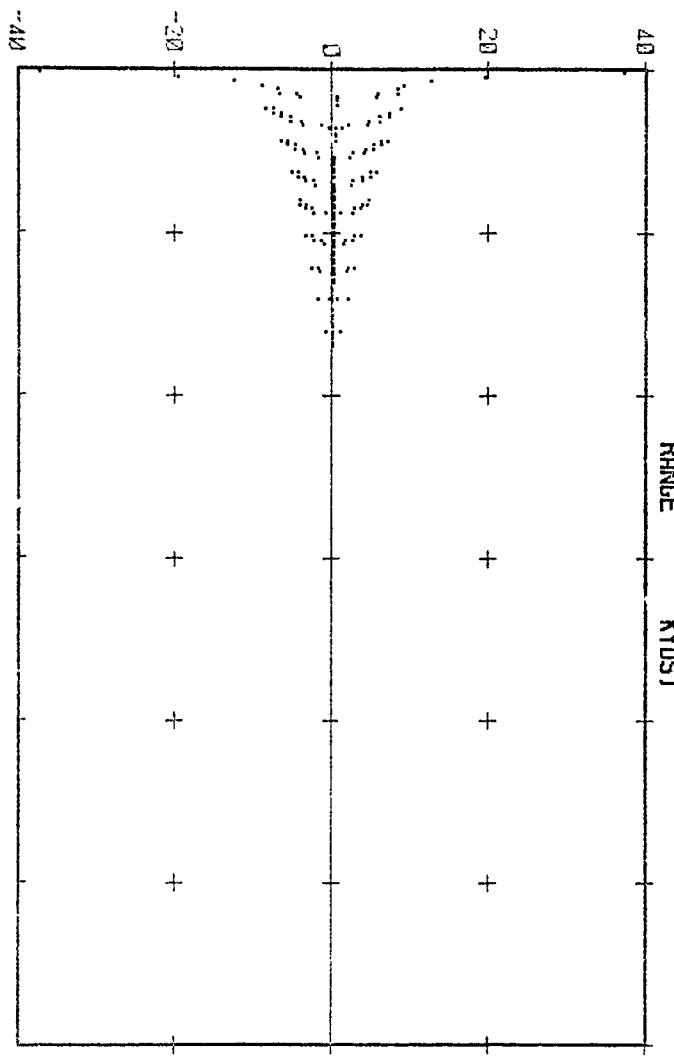
1450 M/S 1500 1550

LRAPP

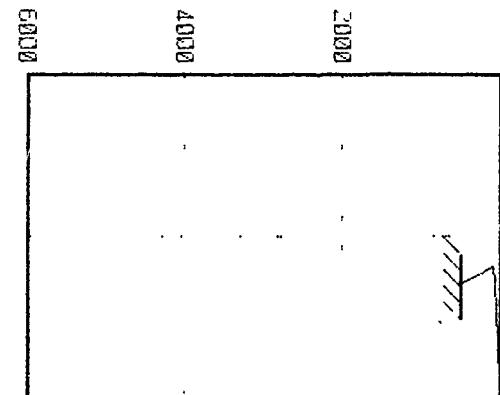
DB LOSS



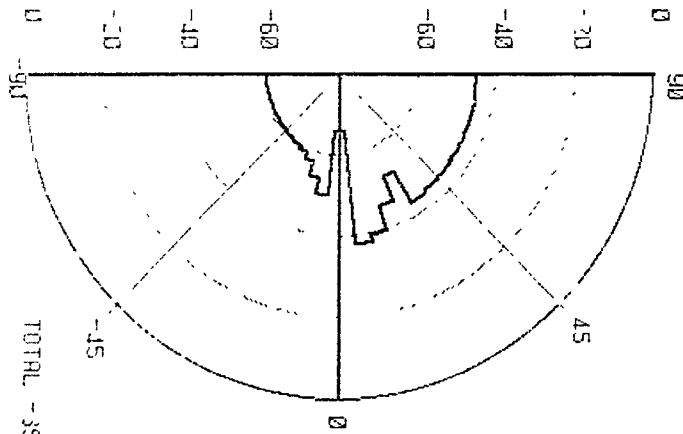
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL - 35.1 LS

70

ARRA 3R SUMMER

S 20 R 262 F 300

1450 M/S 15000 1550
/ / / /

LRAPP

DB LOSS

50

+

+

+

+

+

+

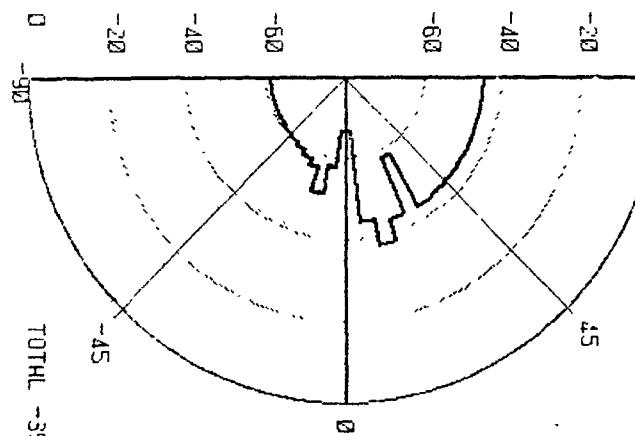
130 +
110 +
40 +
20 +
0 +
-20 +
-40 +
-60 +
-80 +
-100 +
-150 +
-200 +
-250 +
-300 +

RANGE (KIOS)

DEPTH IN METERS

20000
400000
20000
40000

NOISE (DB)



TOTAL ~35.6 DB

70

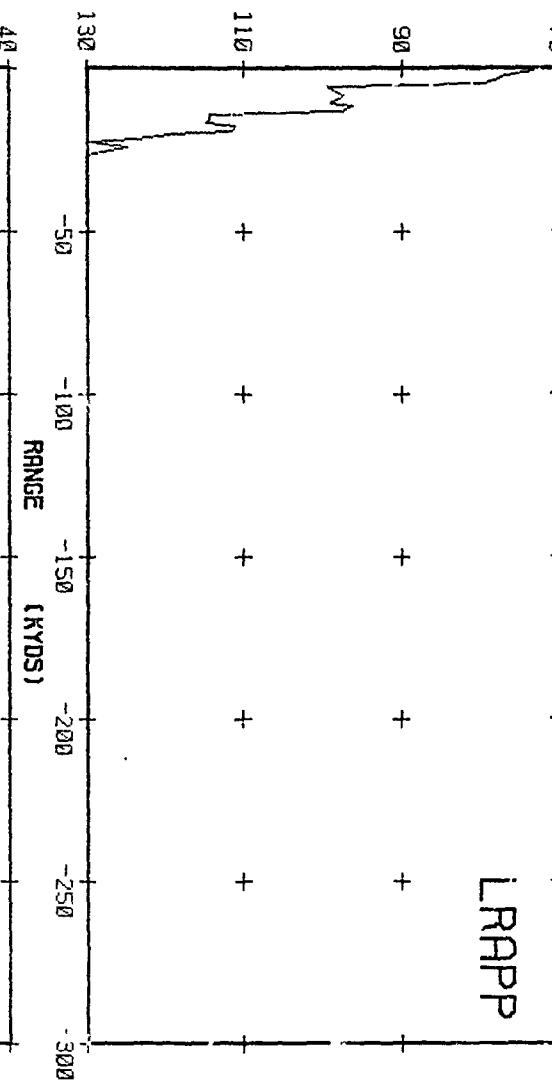
AREA 3A SUMMER

S 52 R 262 F 360

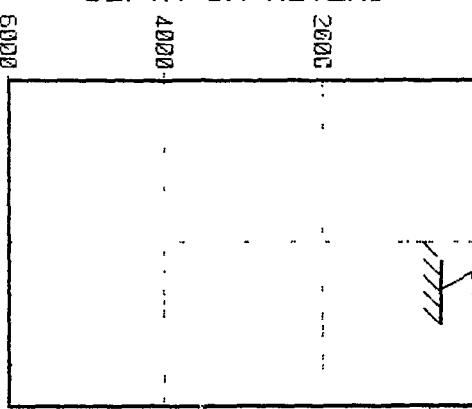
1450 M/S 1500 1550

LRAPP

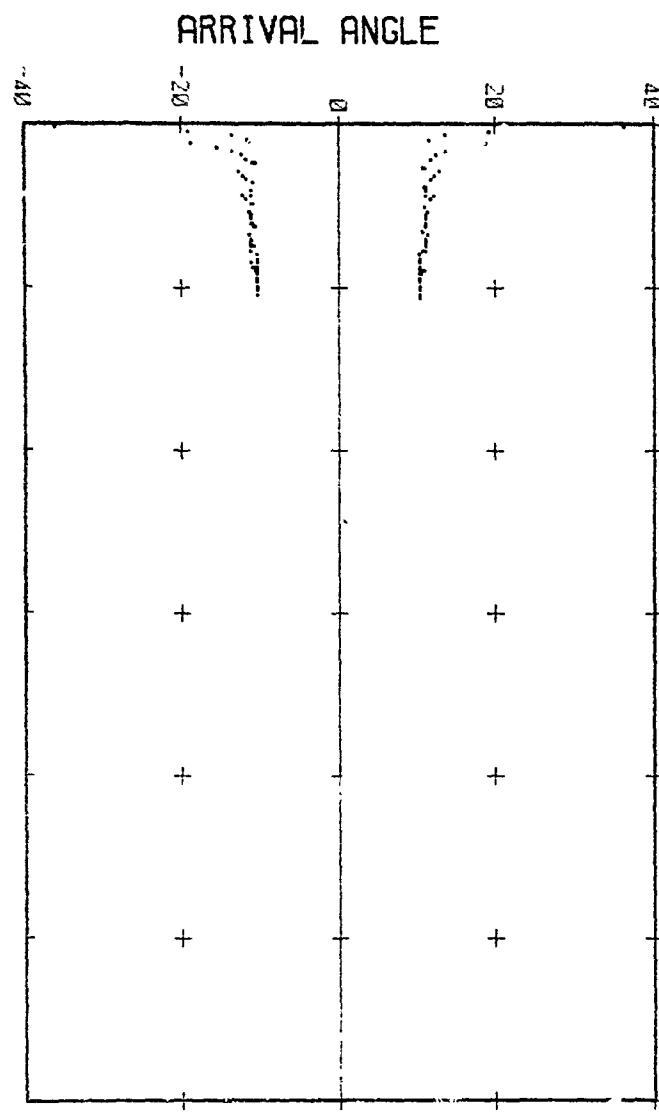
DB LOSS



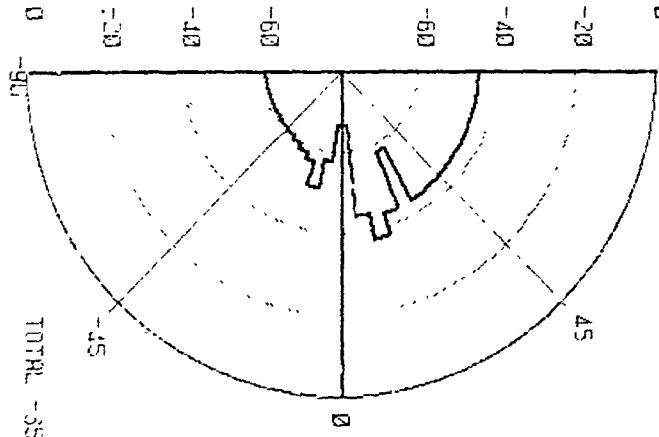
DEPTH IN METERS



NOISE (DB)



ARRIVAL ANGLE



TOTAL - 35.6 5.6

70

AREA 3A SUMMER

S 233 R 262 F 300

1450 M/S 1500 1550

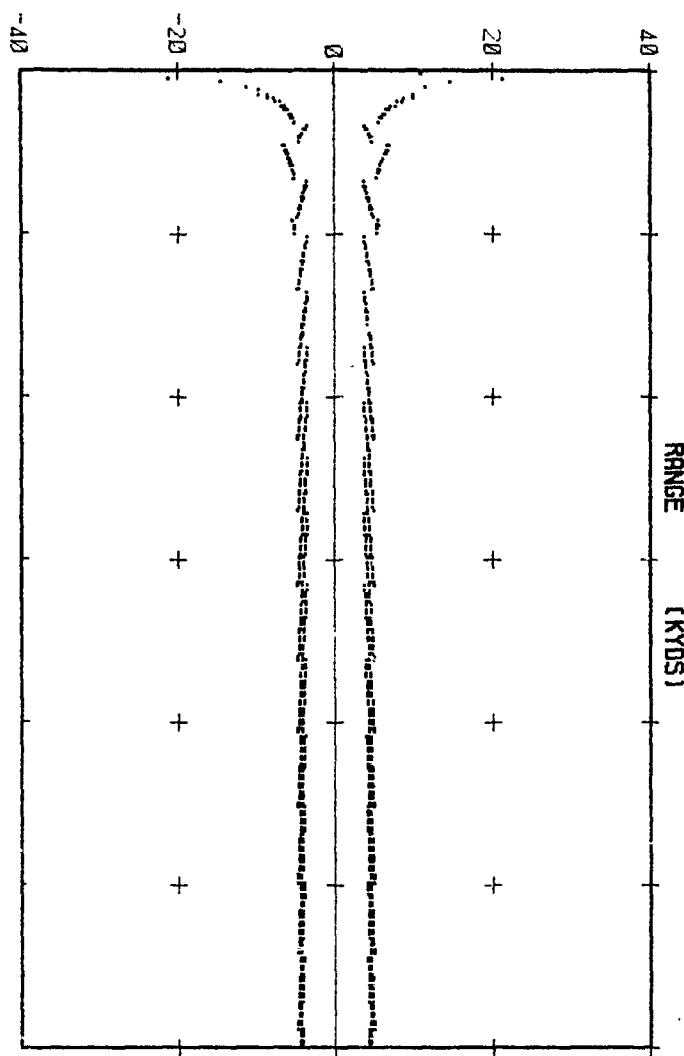
LRAPP

DB LOSS

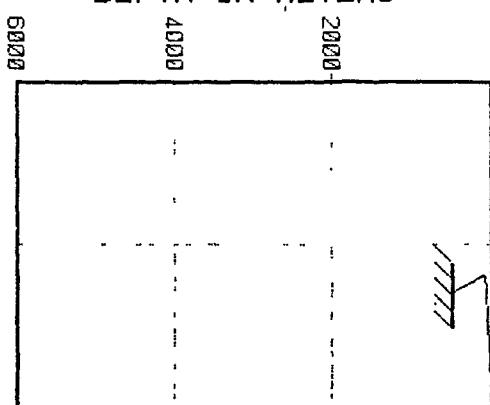
110 + + + + +



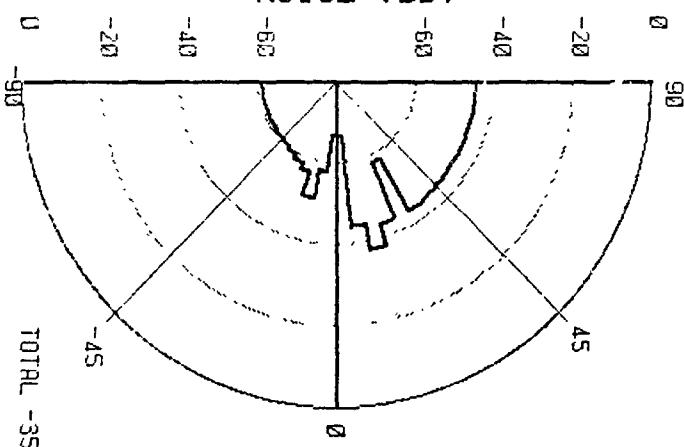
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



AREA 3A SUMMER

S 20 R 300 F 300

1450 M/S 1500 1550.

LRAAPP

DB LOSS

90 +
+ + + + +

130
110
-50 -100 -150 -200 -250 -300

RANGE

(KMS)

DEPTH IN METERS

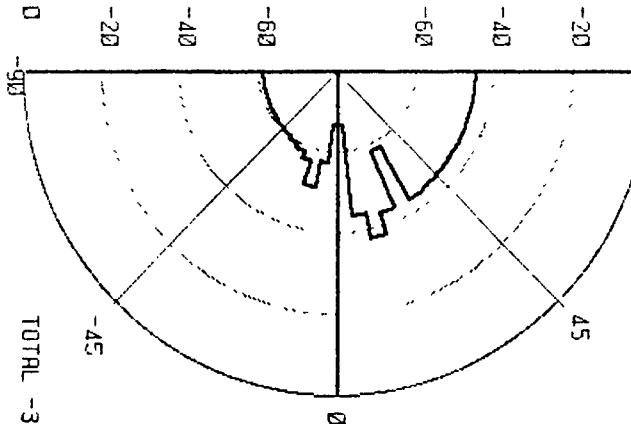
2000
4000
6000

ARRIVAL ANGLE

-20 +
+ + + + + + + + + + + +

-40

NOISE (DB)



TOTAL -35.6 DB

70

ARRR 3A SUMMER

S 50 R 300 F 300

1450 M/S 1500 1550

LRAPP

DB LOSS

90 + + + + +

+ + + + +

+ + + + +

+ + + + +

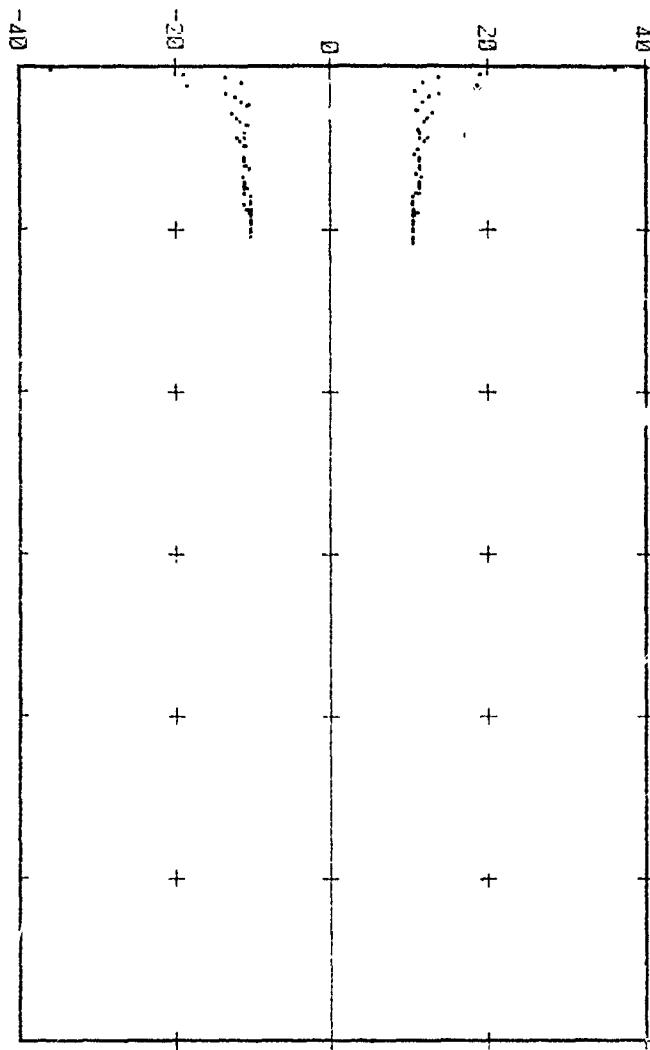
+ + + + +

130
110
90
70
50
30
10
-50 -100 -150 -200 -250 -300

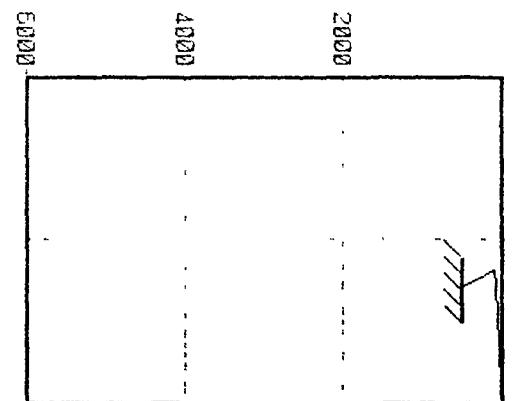
RANGE

(KYDS)

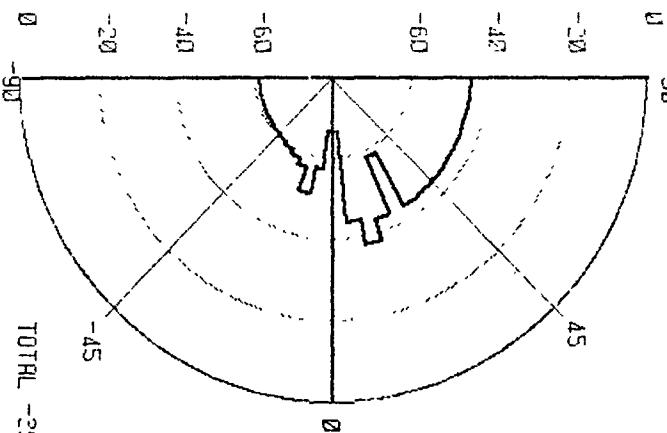
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



AREA 3A SUMMER

S 233 R 300 F 300

1450 M/S 1500 1550

DB LOSS

LRAPP

DEPTH IN METERS

2000
4000
6000

+ + + + + + +

130
110
90
70

-50 -100 -150 -200 -250 -300

RANGE (KIOS)

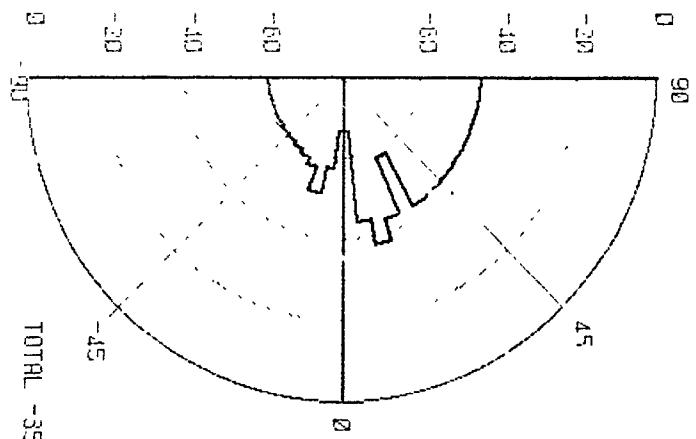
ARRIVAL ANGLE

-20 + + + + + + +

-40

NOISE (DB)

-96-



TOTAL -35.6 DB

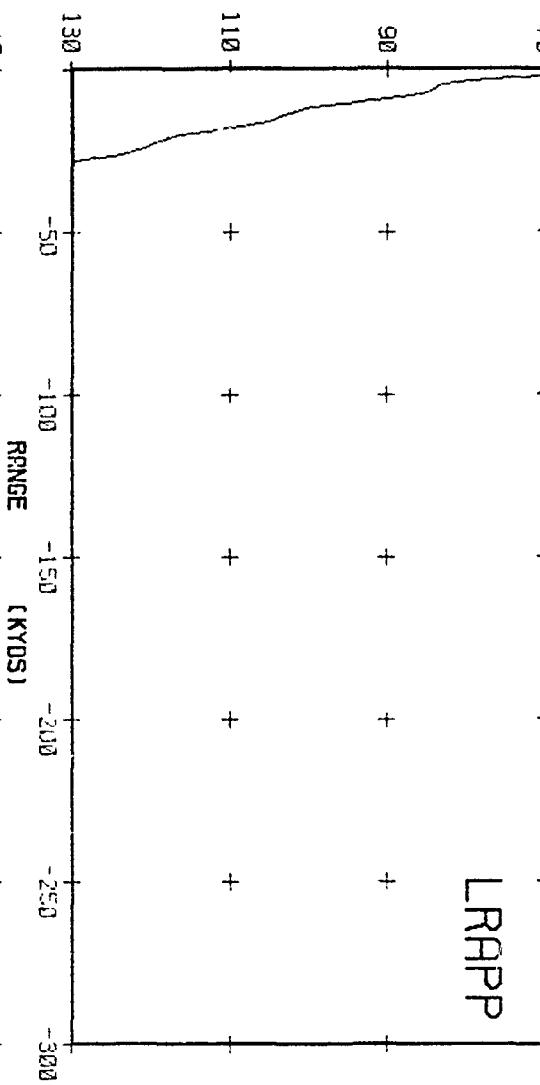
70

AREA 3A SUMMER

S 20 R 1000 F 300

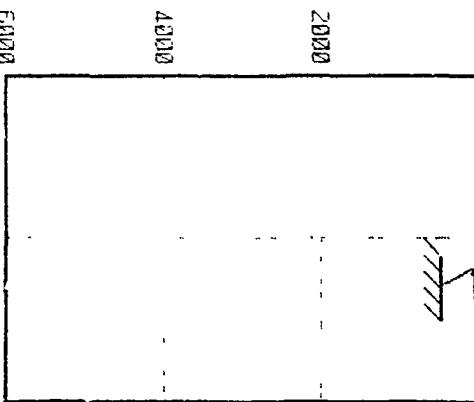
1450 M/S 1500 1550

DB LOSS

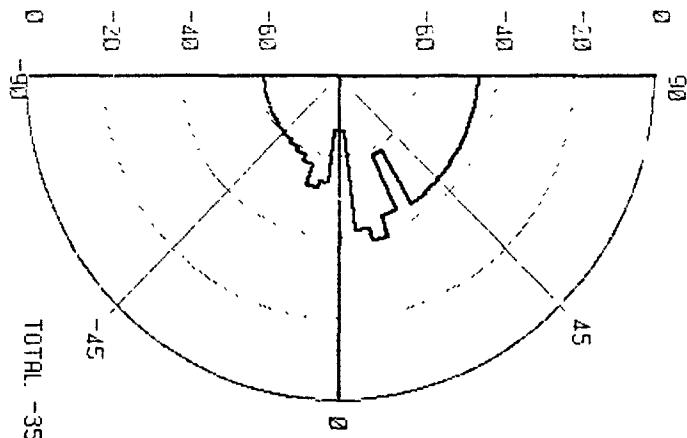


LRAPP

DEPTH IN METERS



NOISE (DB)



TOTAL -35.5 DB

70

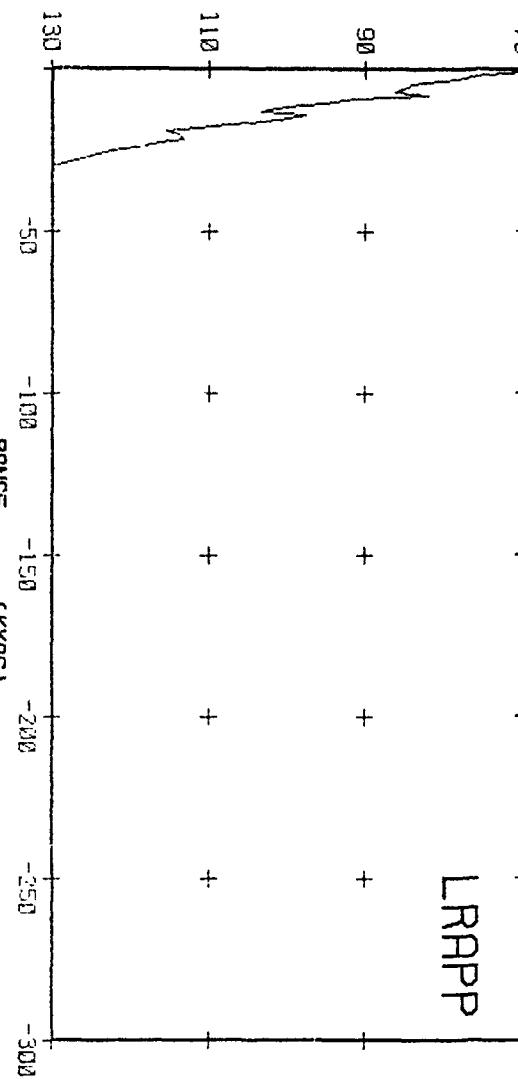
AREA 3A SUMMER

S 50 R 1033 F 303

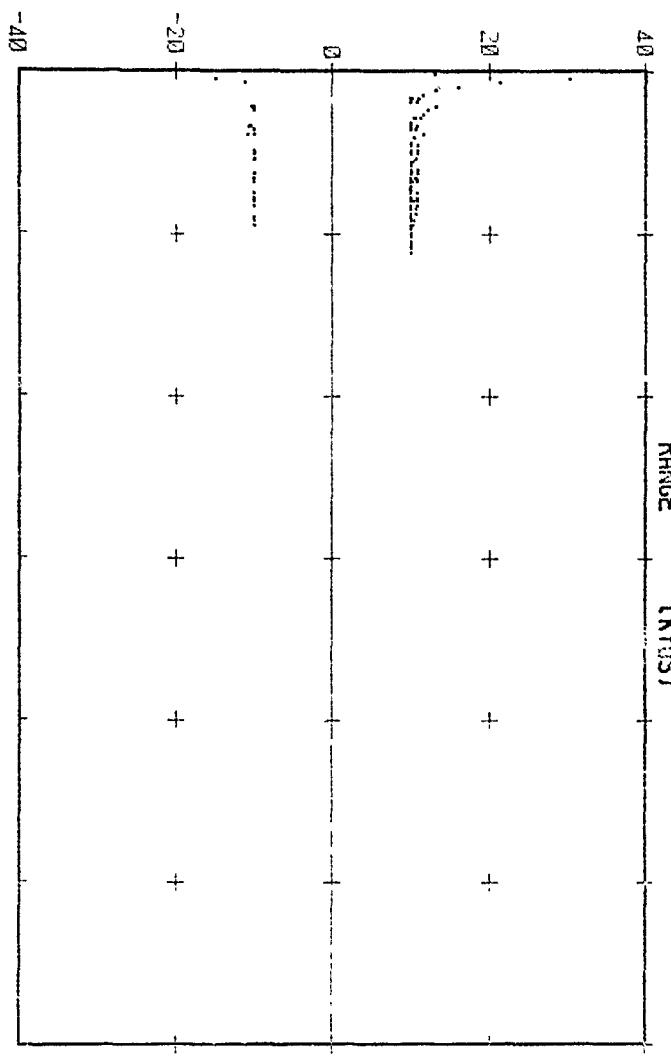
1450 M/S 1500 1550

LRAPP

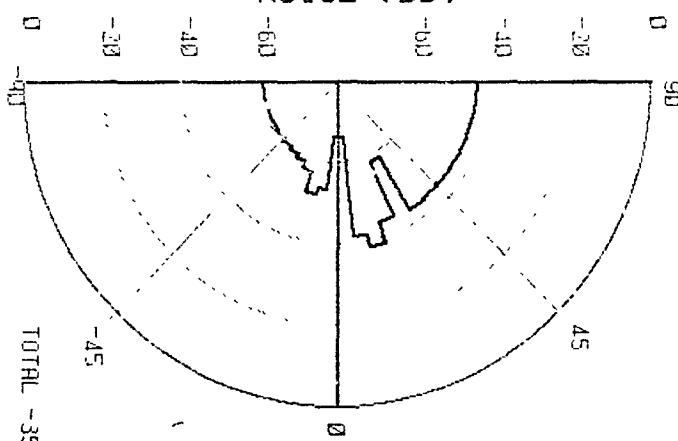
DB LOSS



ARRIVAL ANGLE

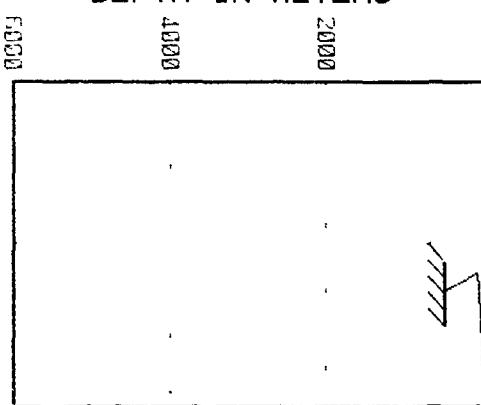


NOISE (DB)



TOTAL -35.5 DB

DEPTH IN METERS



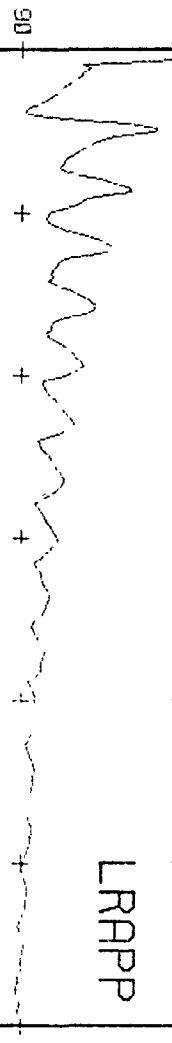
AFTER 3A SUMMER

S 233 R 1033 F 366

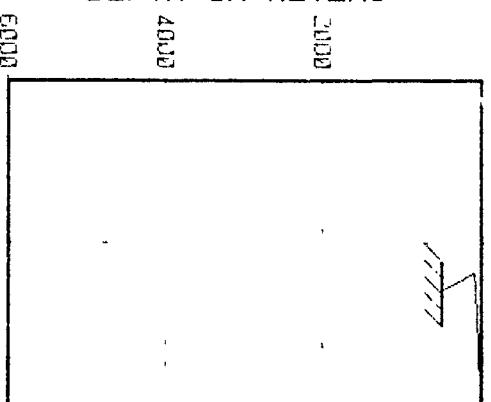
1450 Hz/S 1500 1550

LRAPP

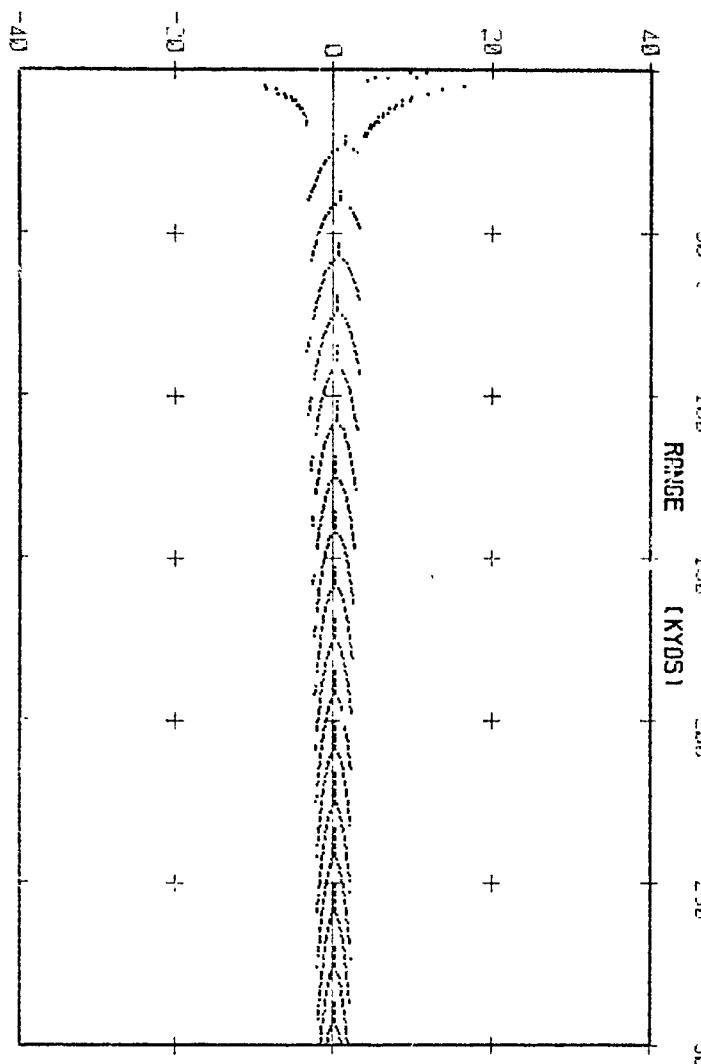
DB LOSS



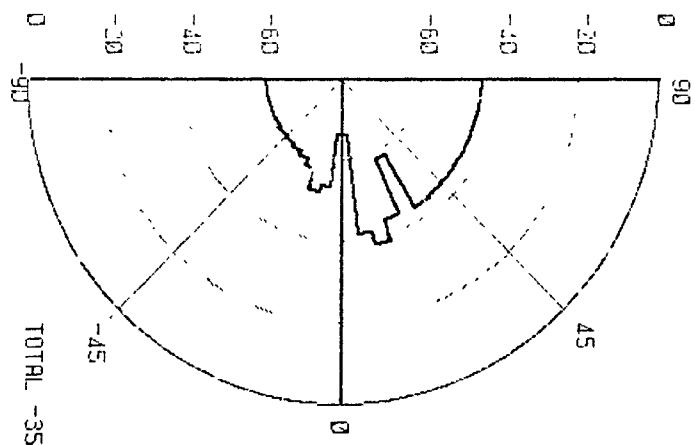
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



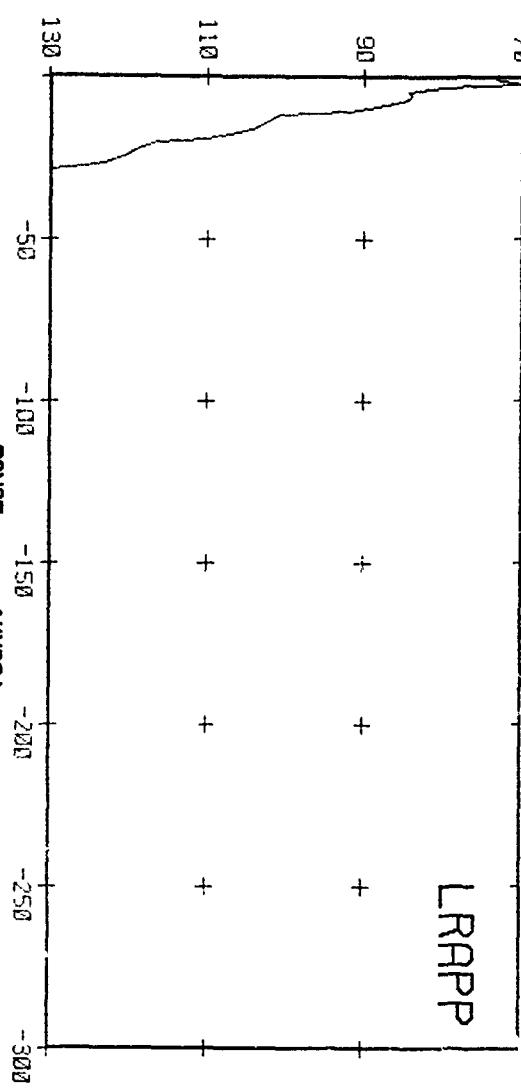
RIVER 39 SUMMER

S 20 R 1500 F 300

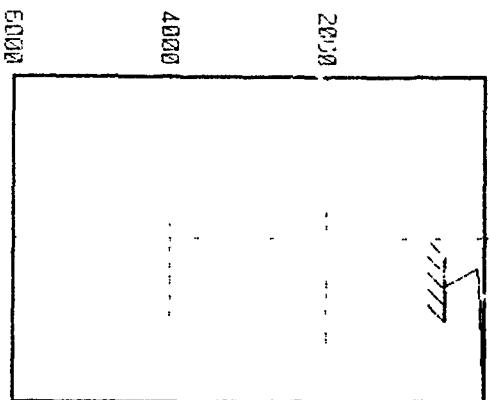
1450 M/S 1500 1550

LRAPP

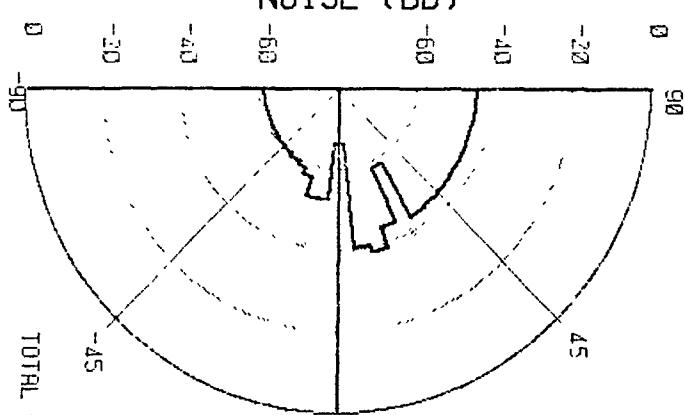
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -35.5 DB

70

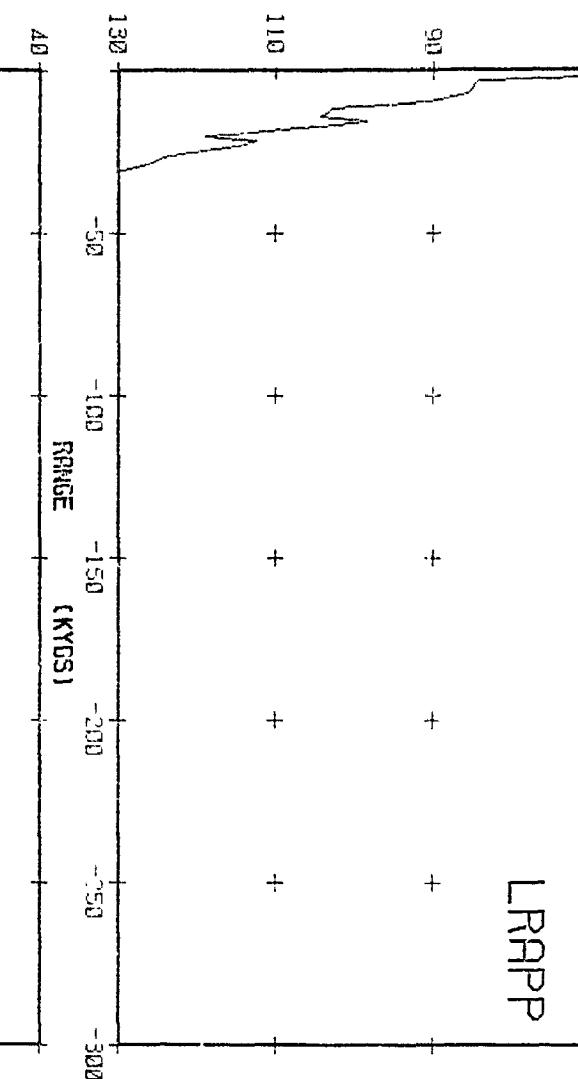
ARRR 3H SUMMER

S 50 R 1500 F 300

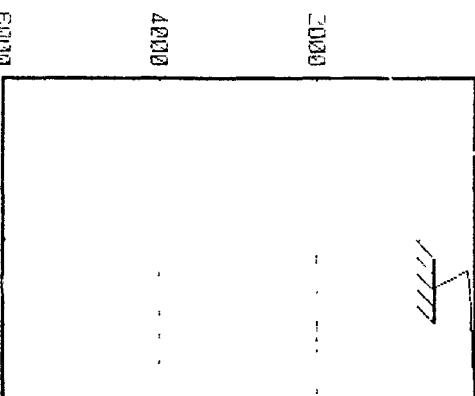
1450 M/S 1500 1550

LRAPP

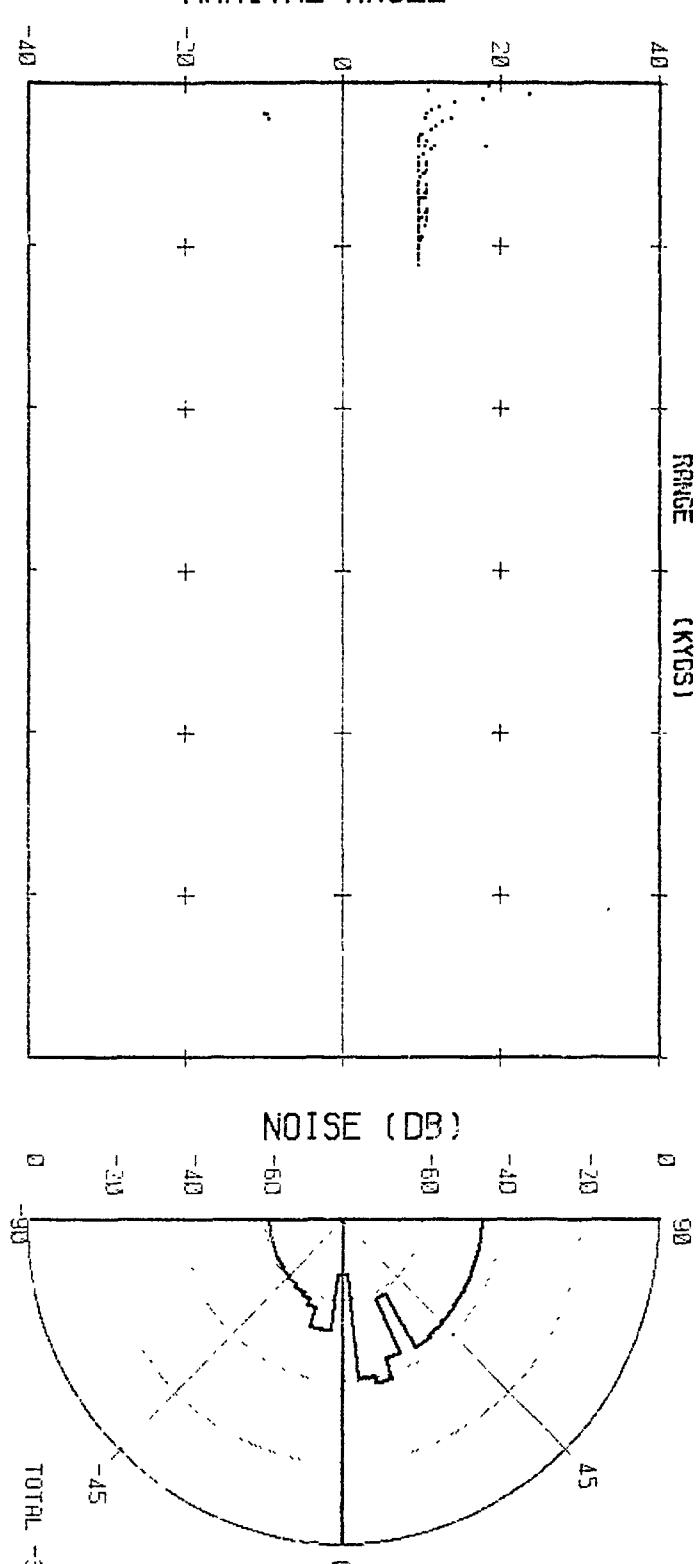
DB LOSS



DEPTH IN METERS



NOISE (DB)

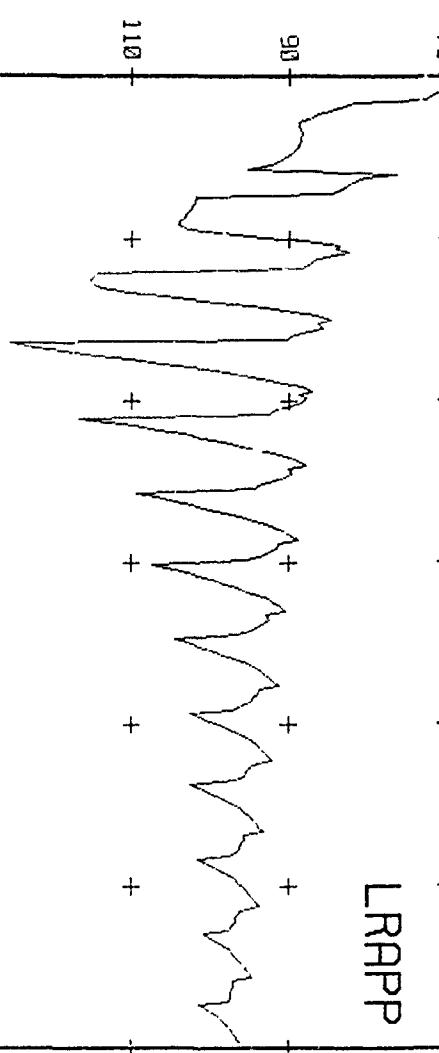


AREA 3A SUMMER

S 233 R 1500 F 300

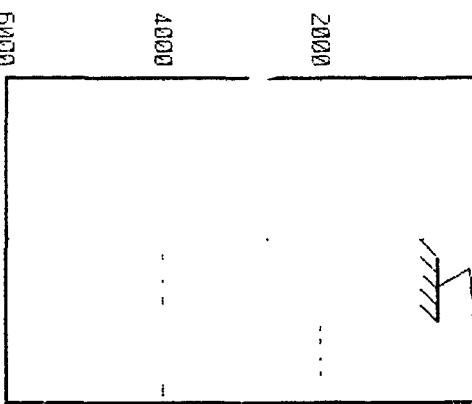
1450 M/S 1500 1550

DB LOSS

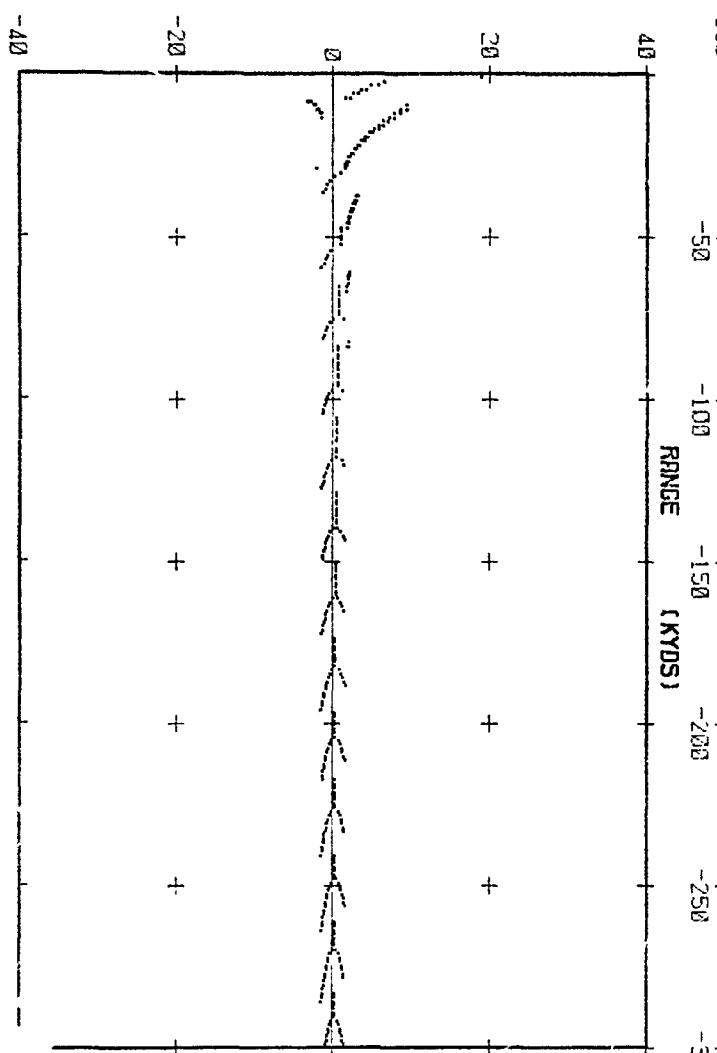


LRAAPP

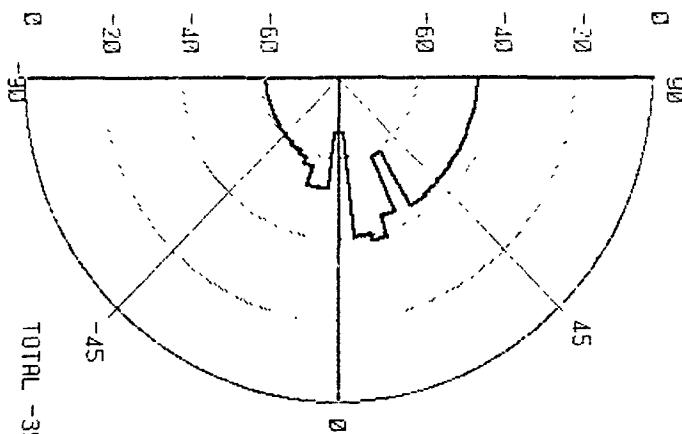
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -35.5 DS

76

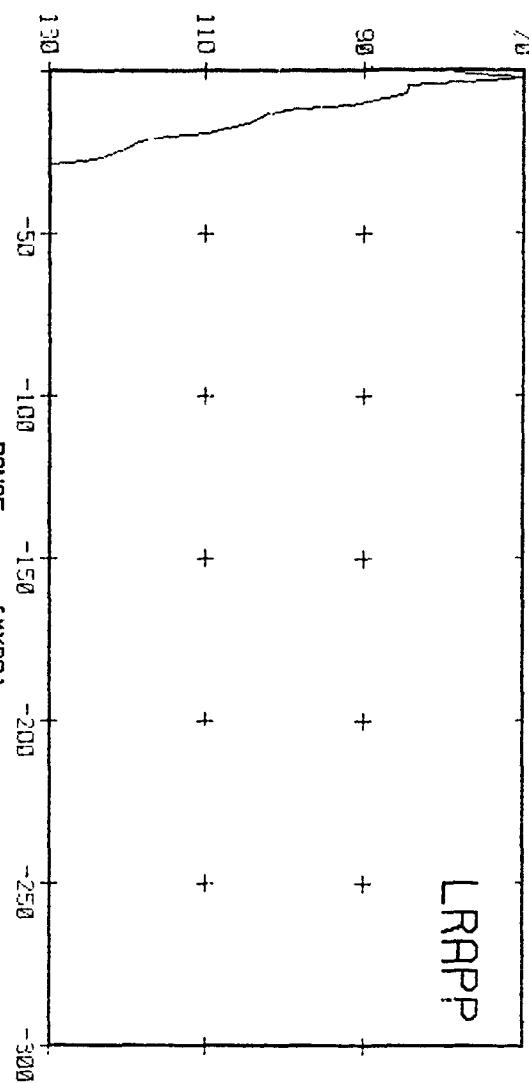
ARRR 3R SUMMER

S 20 R 1640 F 300

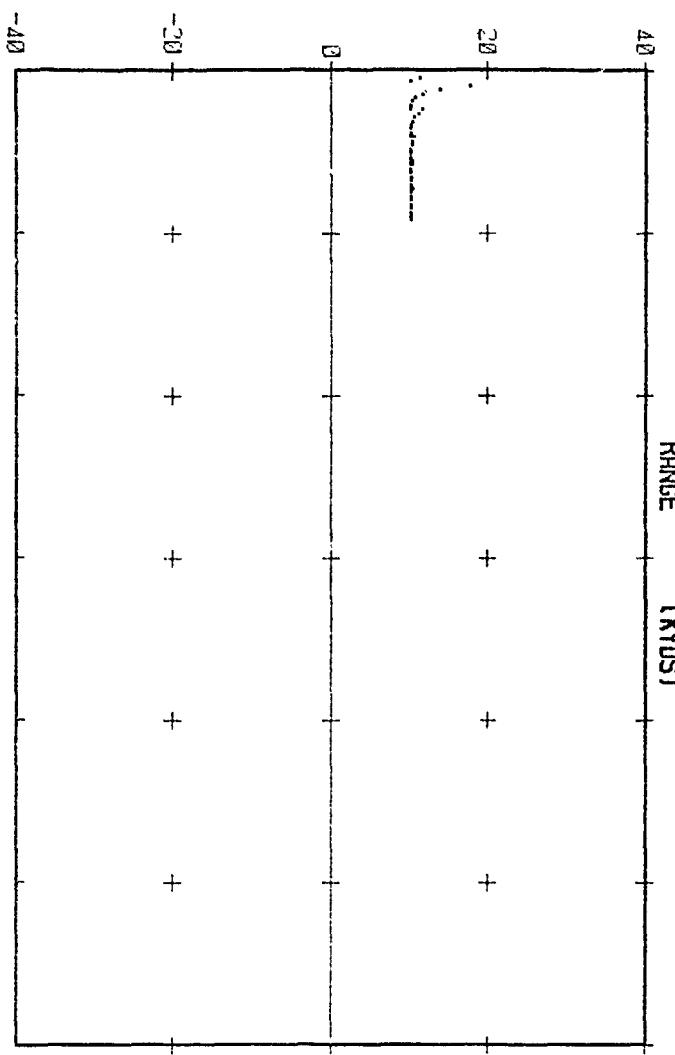
1450 M/S 1500 1550

LRAPP

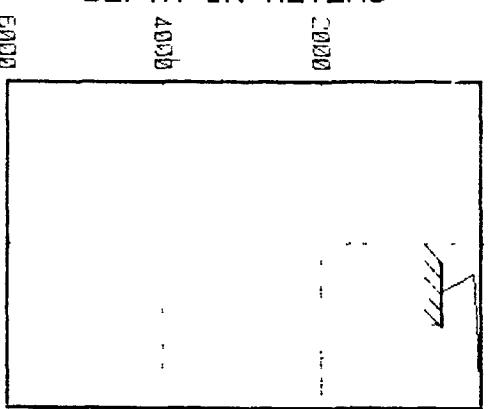
DB LOSS



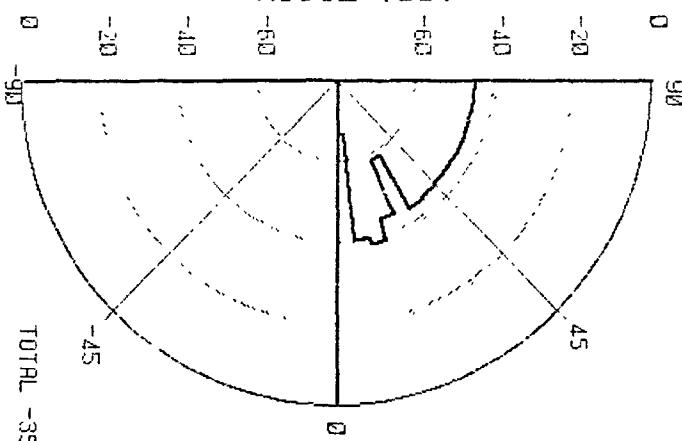
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



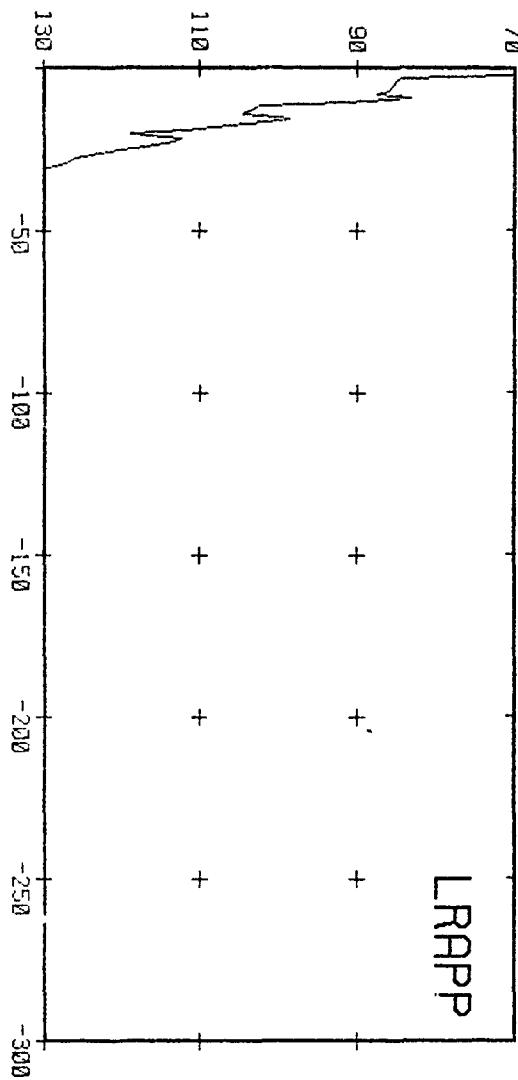
AREA 3A SUMMER

S 58 R 1640 F 300

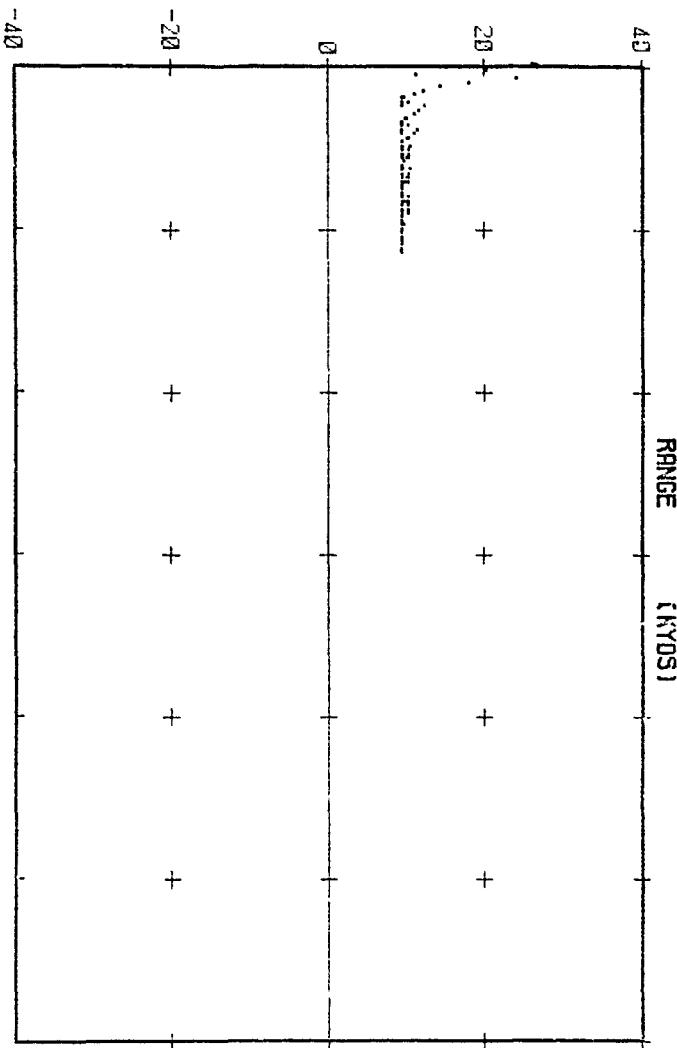
1450 M/S 1500 1550

L RAPP

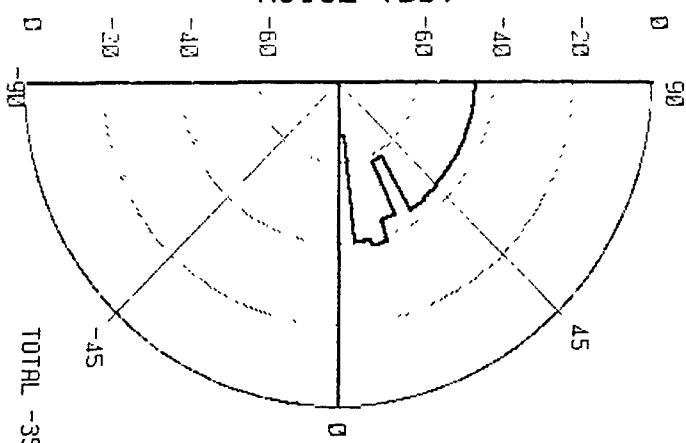
DB LOSS



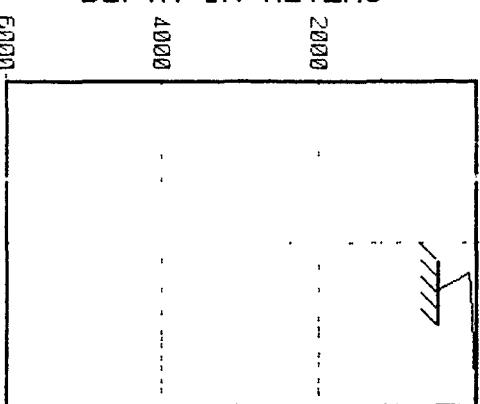
ARRIVAL ANGLE



NOISE (DB)



DEPTH IN METERS



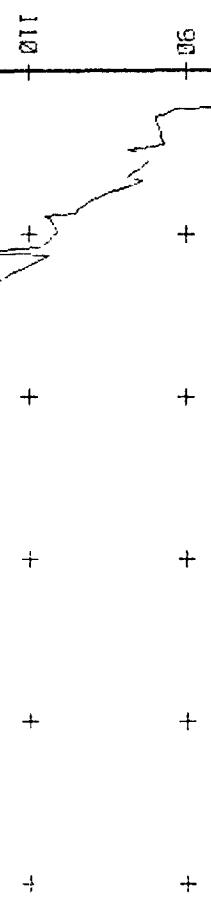
AREA 3A SUMMER

S 233 R 1640 F 300

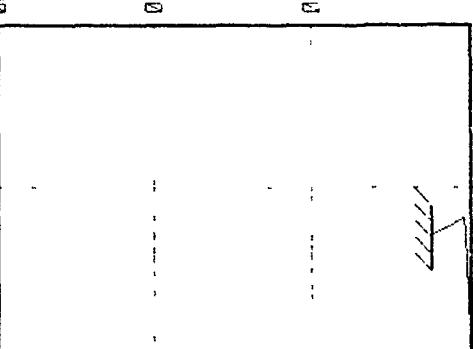
1450 1455 1500 1550

LRAPP

DB LOSS

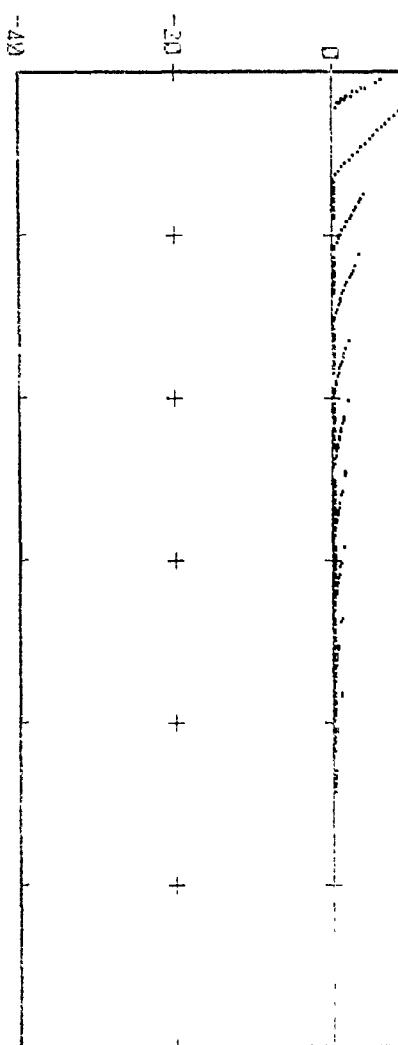


DEPTH IN METERS

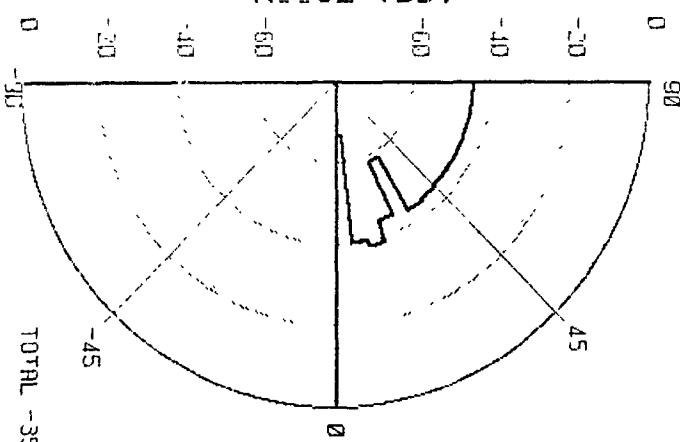


NOISE (DB)

ARRIVAL ANGLE



-42



TOTAL -35.5 DB

AREA 3R SUMMER

S 20 R 60 F 600

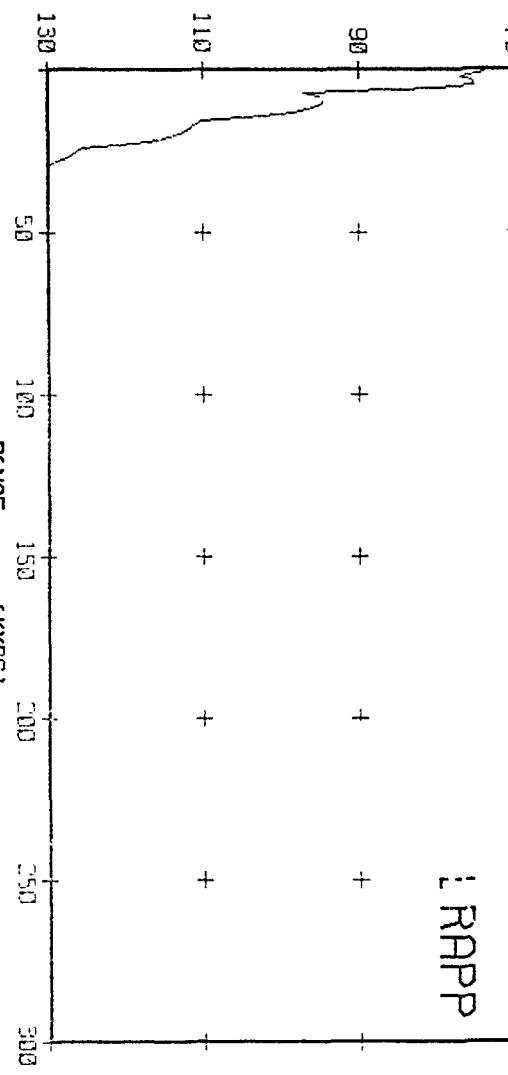
.1450 M/S

1500

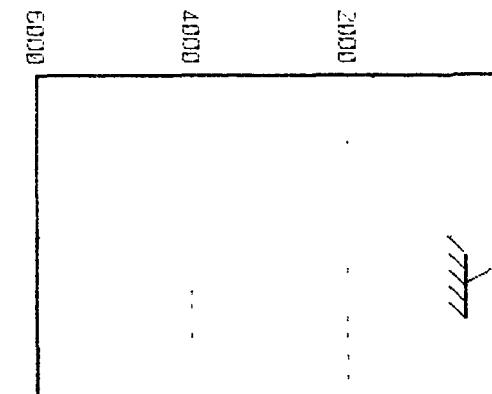
1550

RAPP

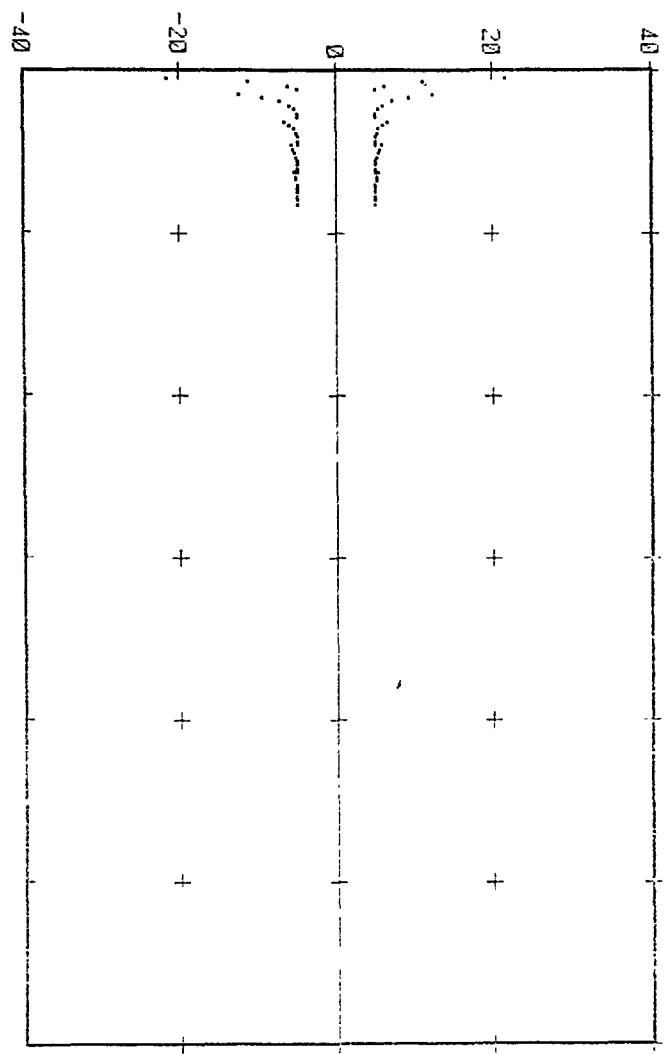
DB LOSS



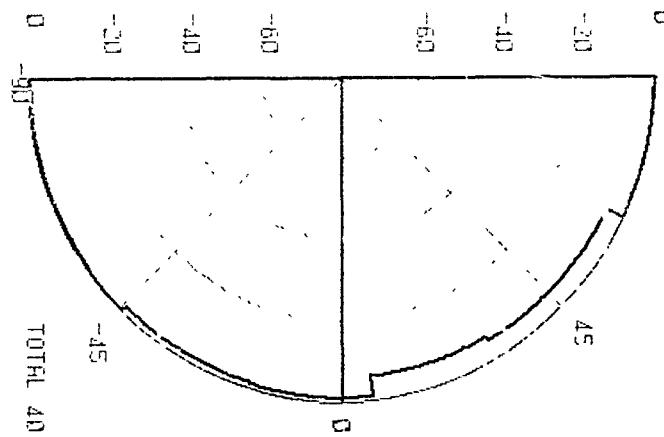
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL 40.2 DB

AREA 3A SUMMER S 50 R 60 F 600 1450 145 1500 1550

L RAPP

DB LOSS

90 + + + + +
110 + + + + +
130 -50 -100 -150 -200 -250 -300

RANGE (KIOS)

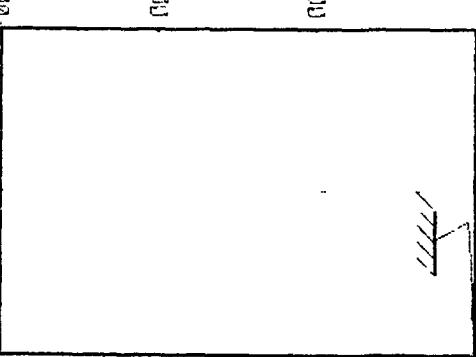
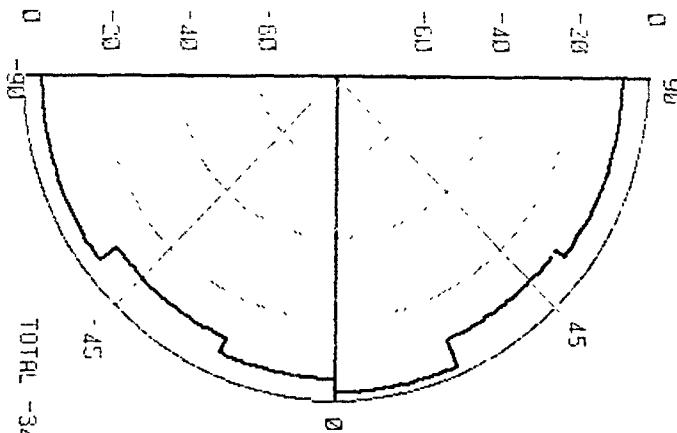
DEPTH IN METERS

2000 4000 6000

ARRIVAL ANGLE

20 + + + + +
0 + + + + +
-20 + + + + +
-40 + + + + +

NOISE (DB)



ARR 3R SUMMER

S 233 R 60 F 600

1450 M/S 1500 1550

L RAPP

DB LOSS

+ + + + + + + + + + + +

130 110 90 70 50 30 10

RANGE

(KTS)

40 -50 -100 -150 -200 -250 -300

DEPTH IN METERS

2000

4000

6000

8000

ARRIVAL ANGLE

-42

NOISE (DB)

0

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-108-

TOTAL 5.4 DB

70

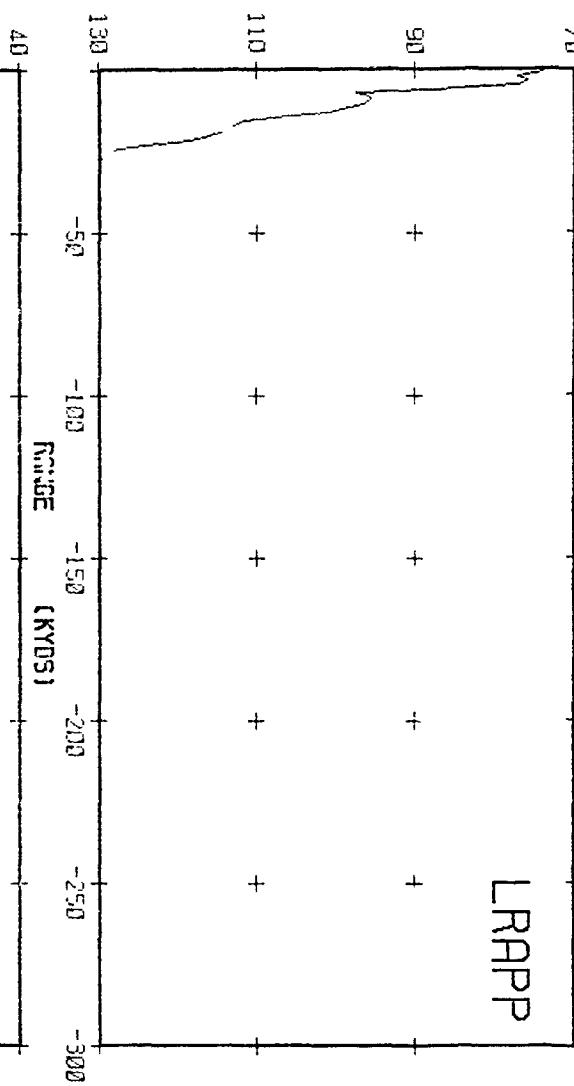
ARR 3R SURMER

S 28 R 133 F 600

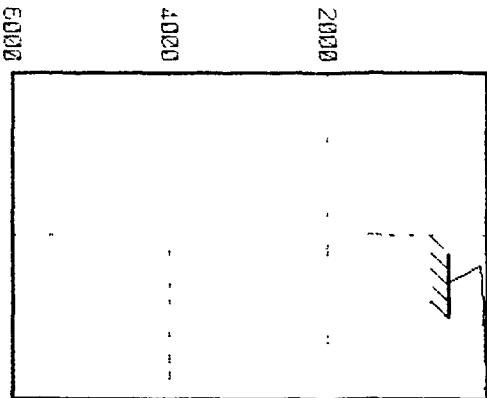
1450 14/5 1500 1550

LRAPP

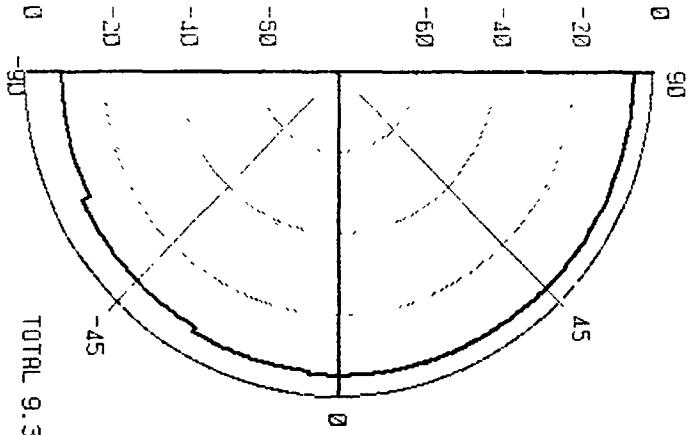
DB LOSS



DEPTH IN METERS



NOISE (DB)



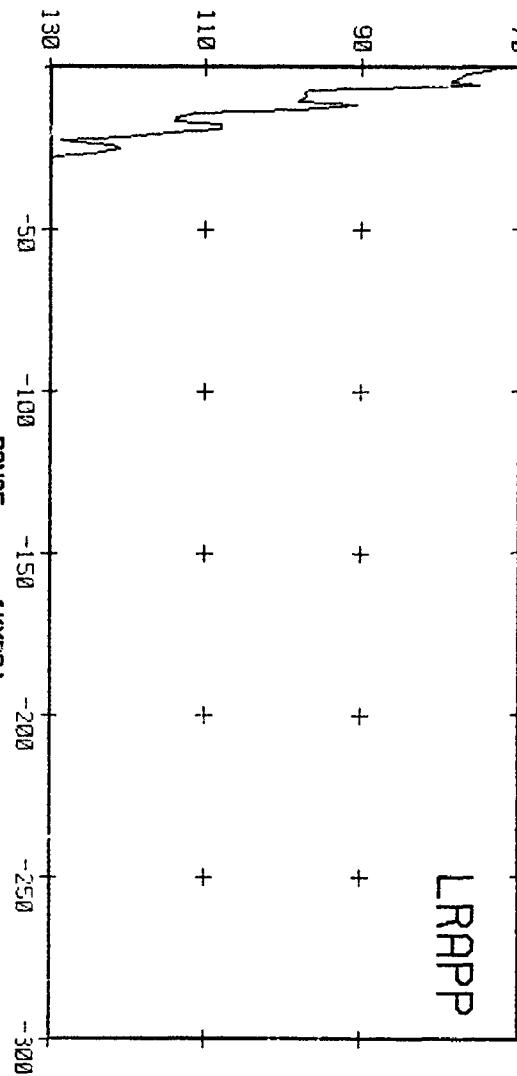
ARRER 3A SUMMER

S 50 R 133 F 600

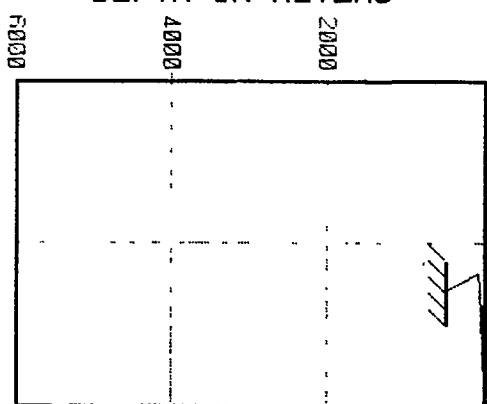
1450 M/S 1500 1550

LRAPP

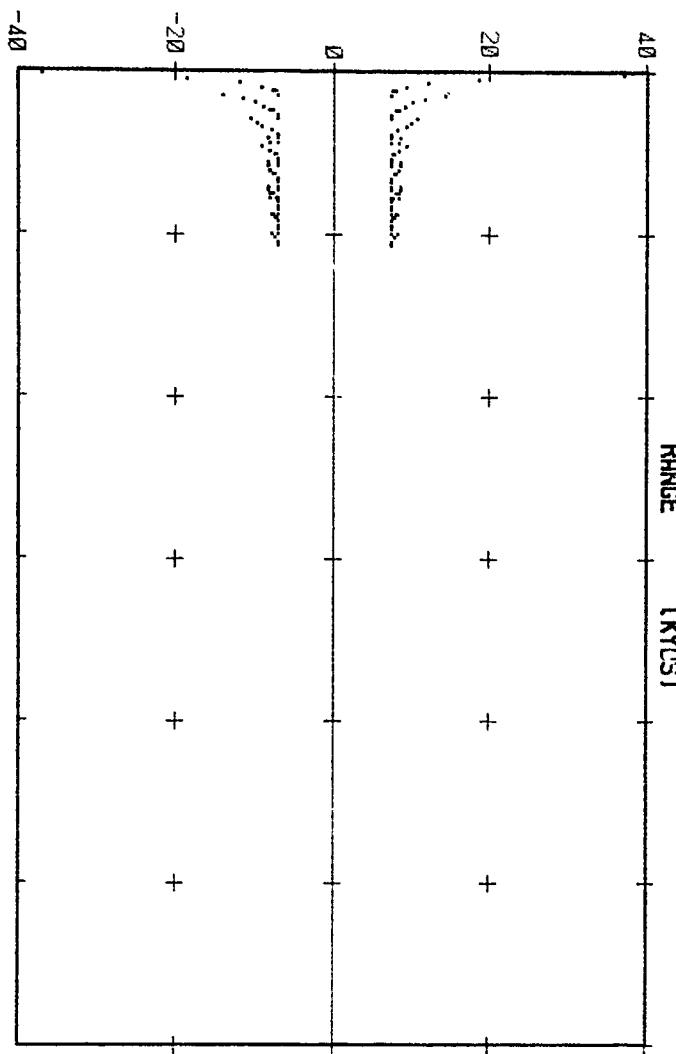
DB LOSS



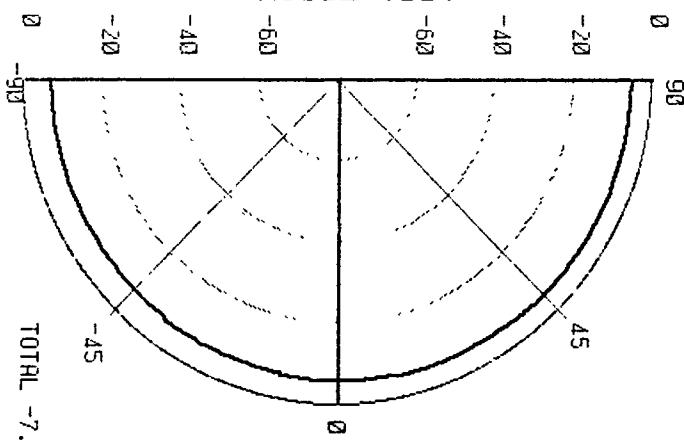
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



70

AREA 3A SUMMER

S 233 R 133 F 600

1450 M/S 1500 1550

LRAPP

DB LOSS

90

110

+

+

+

+

+

+

+

+

+

+

+

+

+

+

130
110
90
40
-50
-100
-150
-200
-250
-300

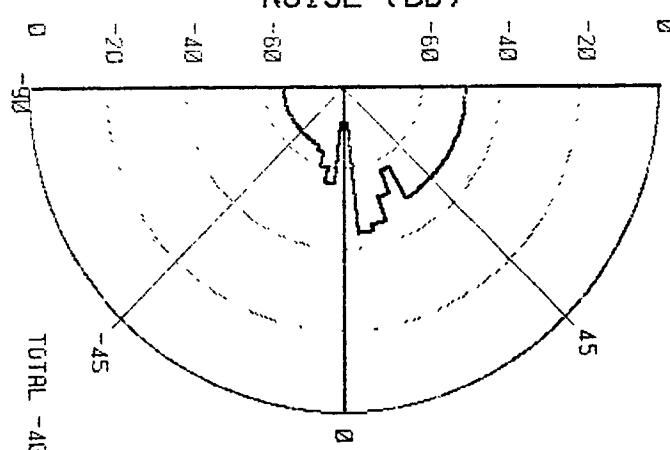
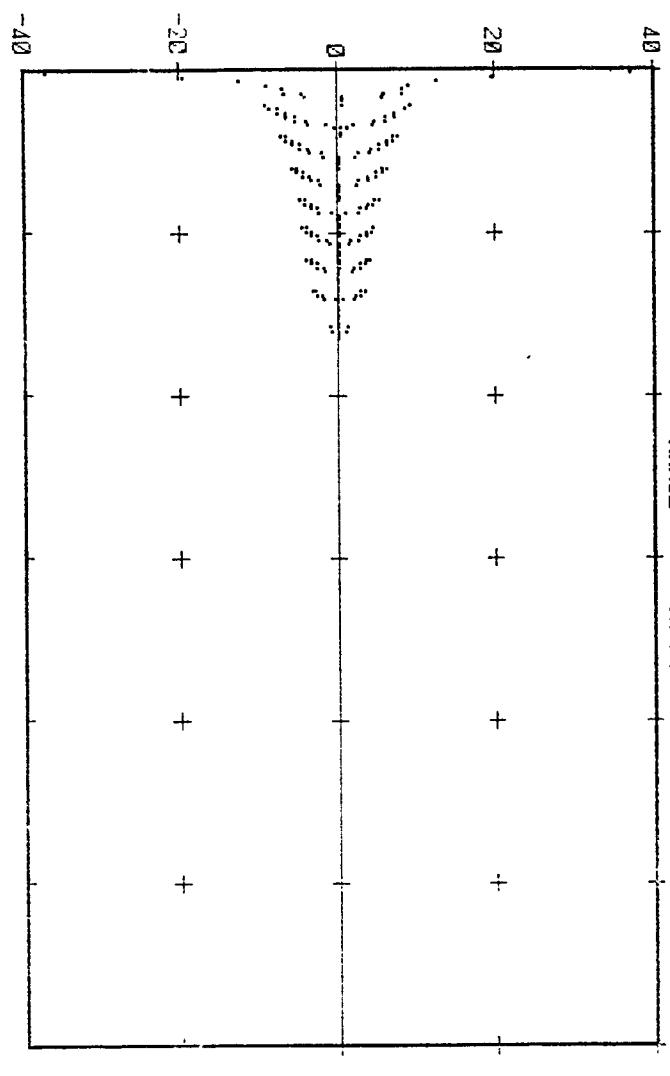
RANGE (KIOS)

DEPTH IN METERS

2000
4000
6000

ARRIVAL ANGLE

NOISE (DB)



TOTAL -40.3 DB

70

AREA 3R SUMMER

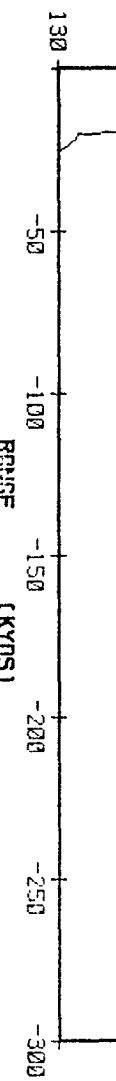
S 20 R 262 F 600

1450 M/S 1500 1550

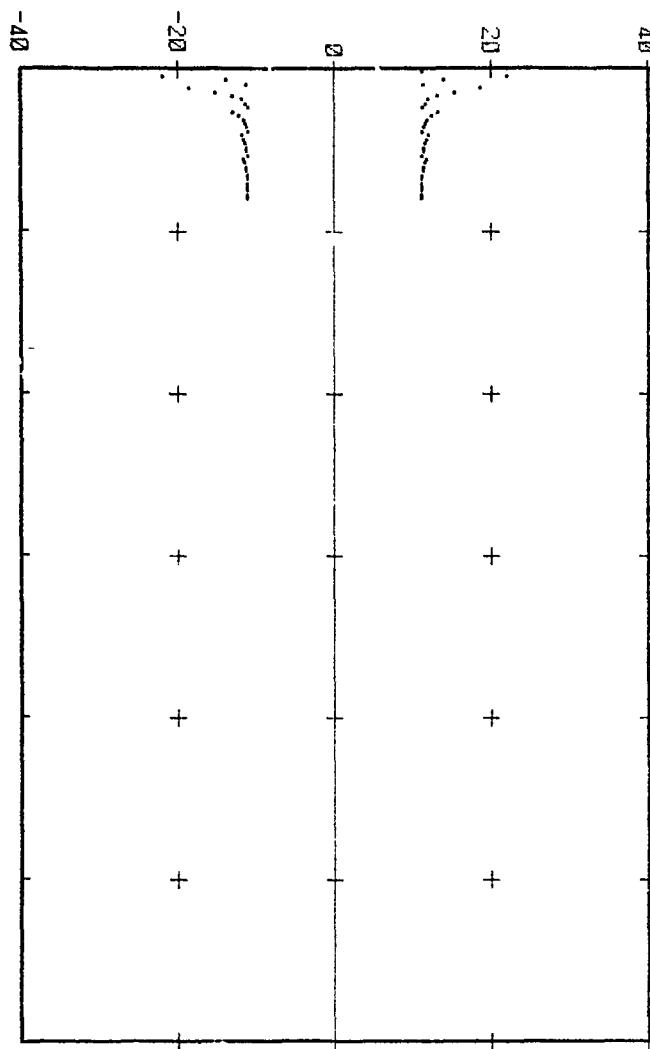
LRAPP

VVVV

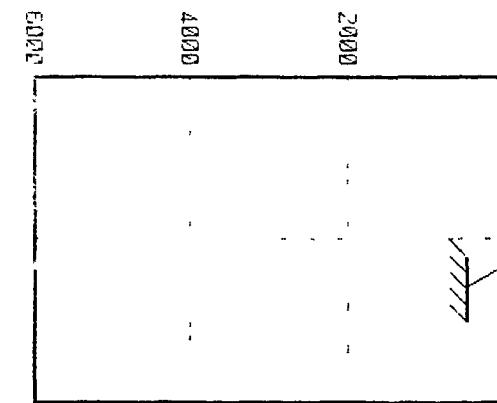
DB LOSS



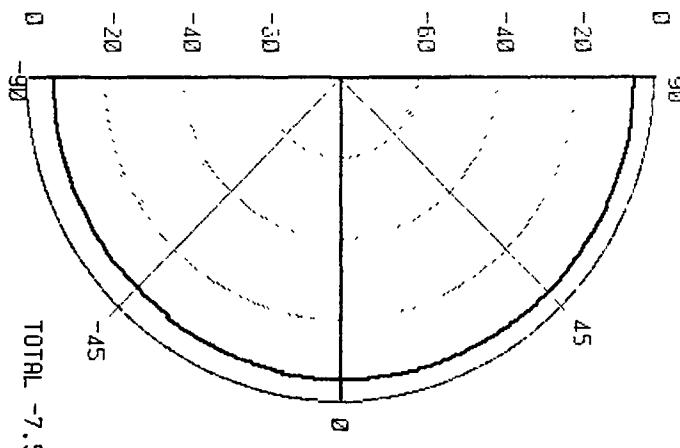
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

AREA 3A SUMMER

S 50 R 262 F 600

1450 M/S 1500 1550

LRAPP

DB LOSS

90

+

+

+

+

+

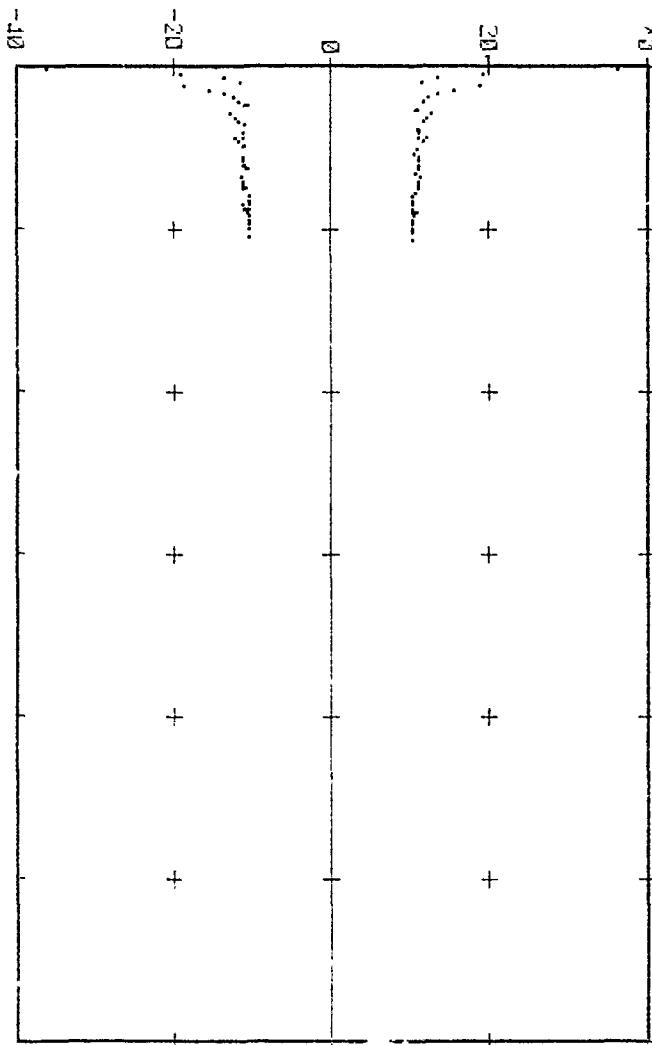
2000

4000

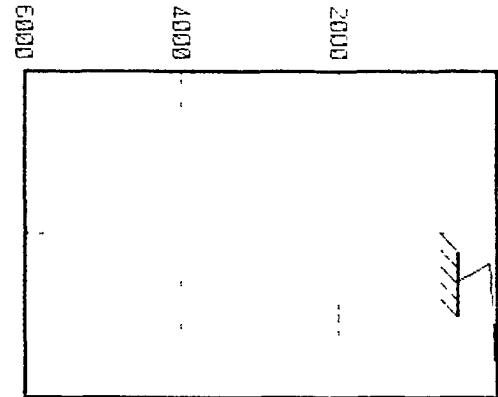
130
110
-50
-100
-150
-200
-250
-300

RANGE (KMS)

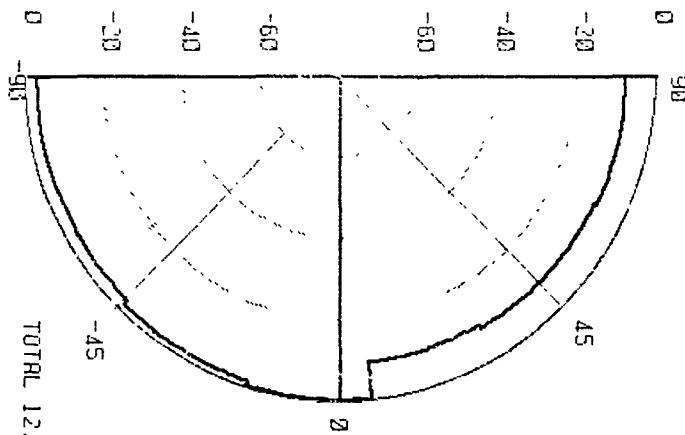
ARRIVAL ANGLE



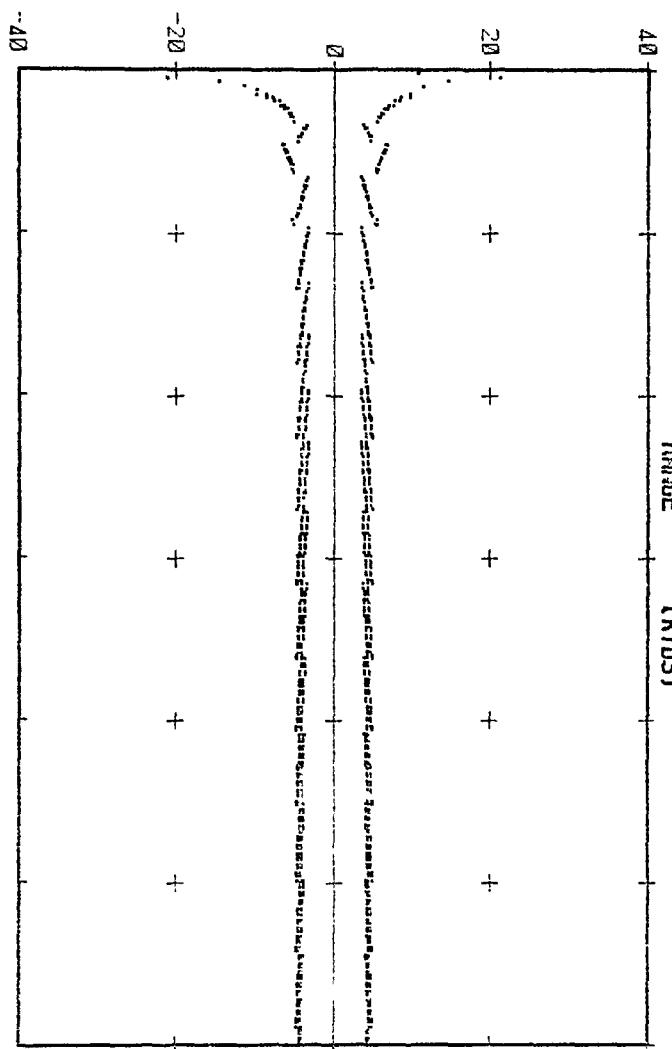
DEPTH IN METERS



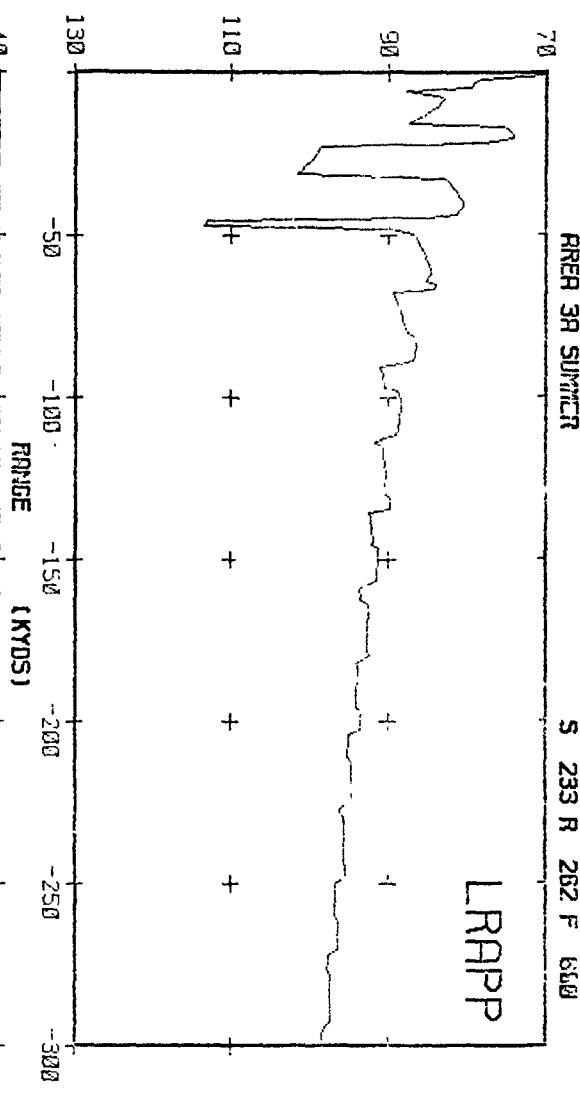
NOISE (DB)



ARRIVAL ANGLE



DB LOSS



70

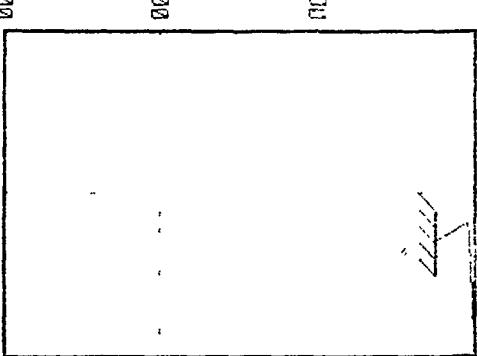
ARR 3A SUMMER

S 233 R 262 F 660

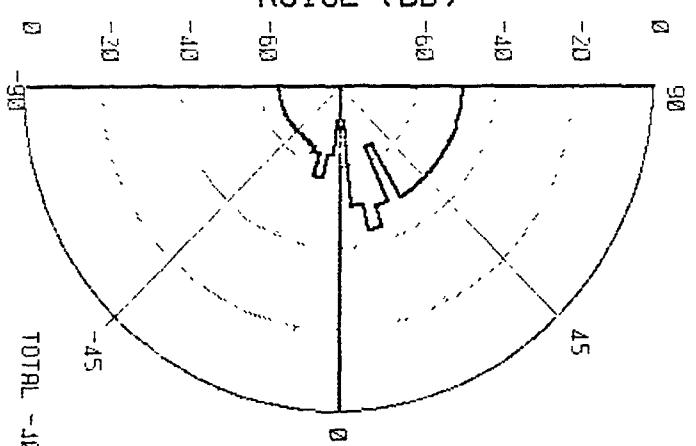
1450 M/S 1500 1550

L.R.A.P.P.

DEPTH IN METERS



NOISE (DB)



TOTAL - 30.7 DB

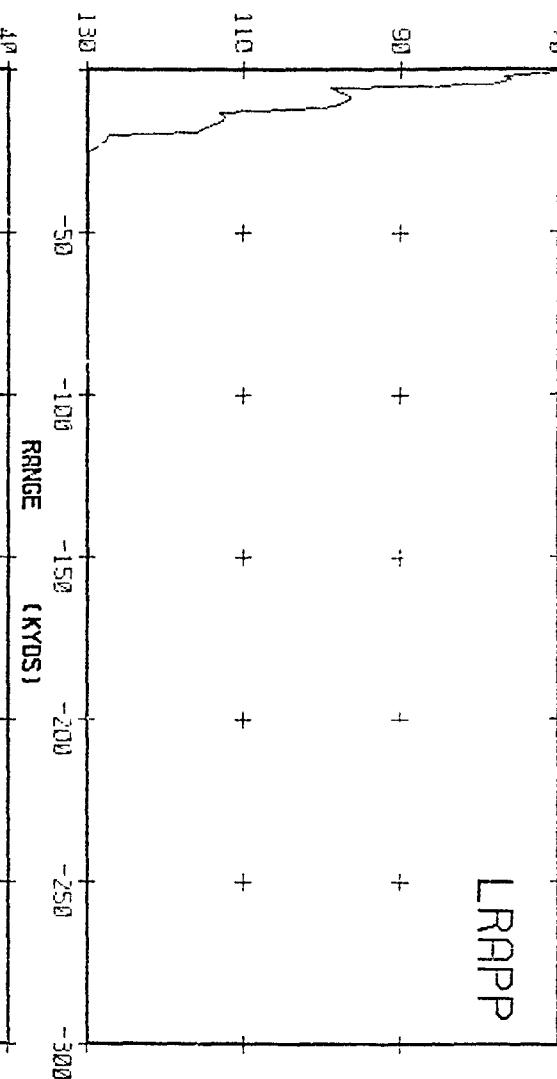
AREA 3A SUMMER

S 20 R 302 F 628

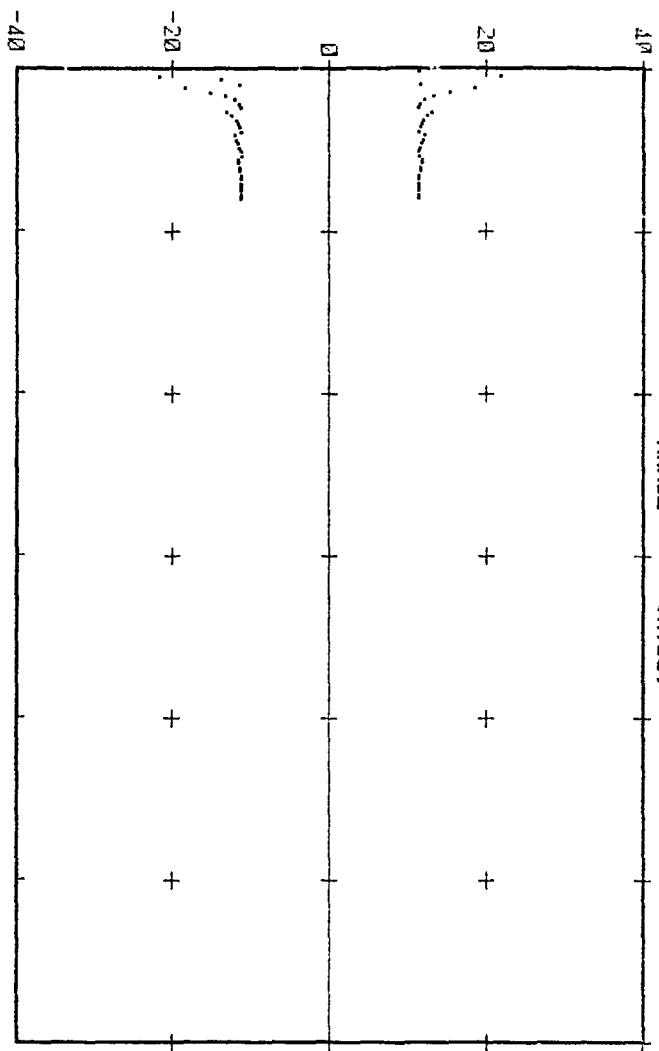
1450 Hz 1500 1550

LRAAPP

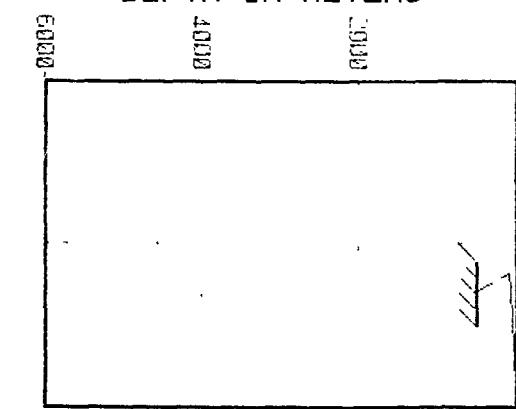
DB LOSS



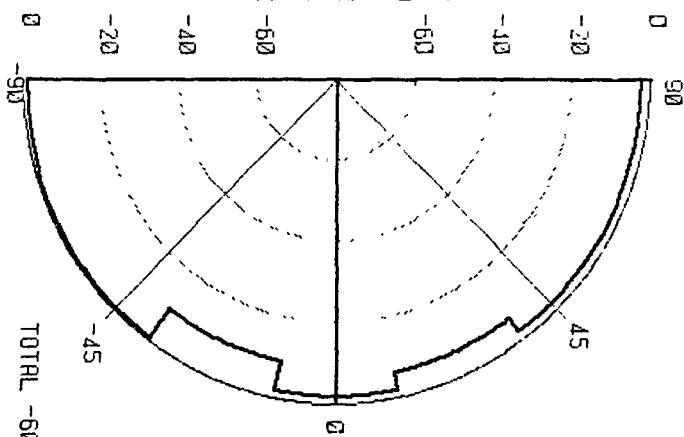
ARRIVAL ANGLE



DEPTH IN METERS



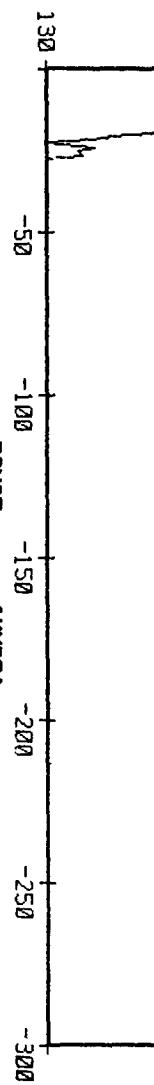
NOISE (DB)



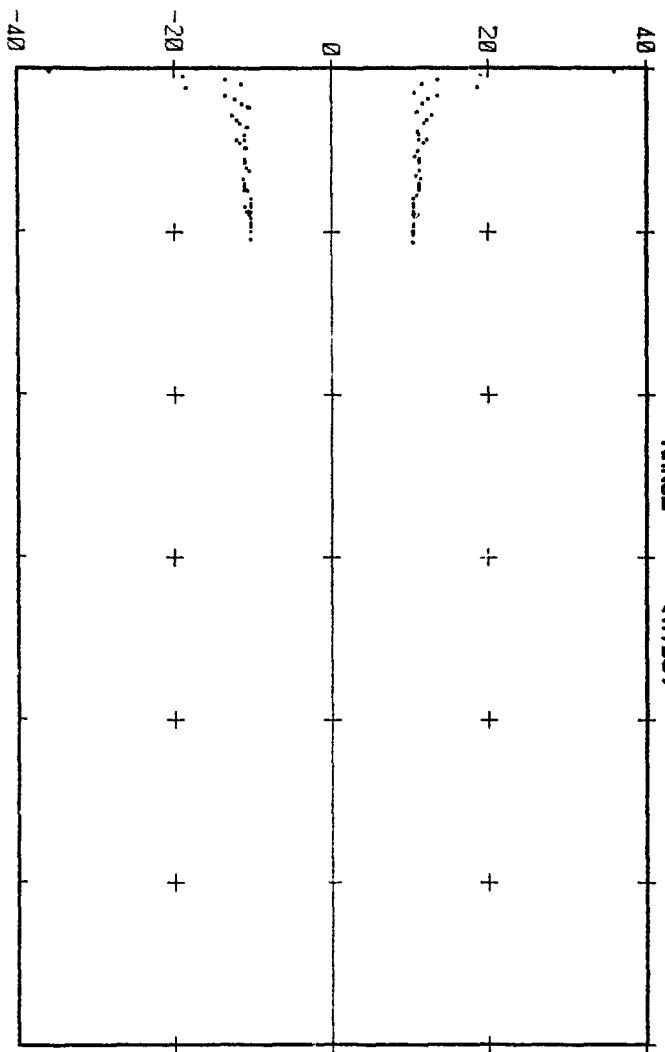
TOTAL -60.2 DB

AREA 3A SUMMER S 50 R 300 F 600
LRAPP 1450 M/S 1500 1550

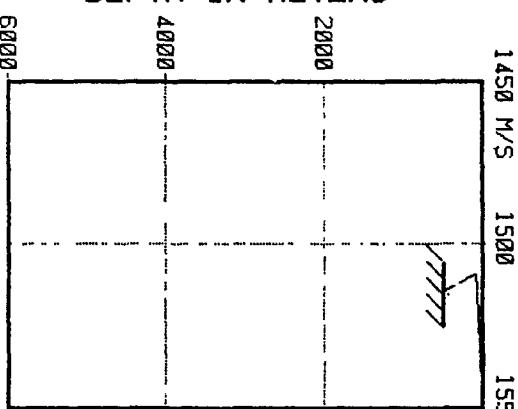
DB LOSS



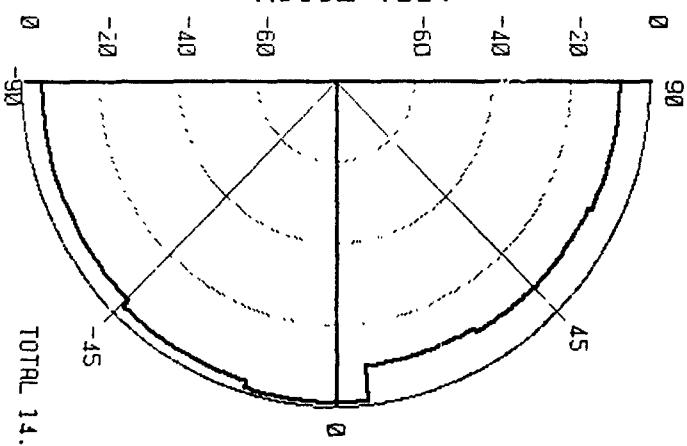
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



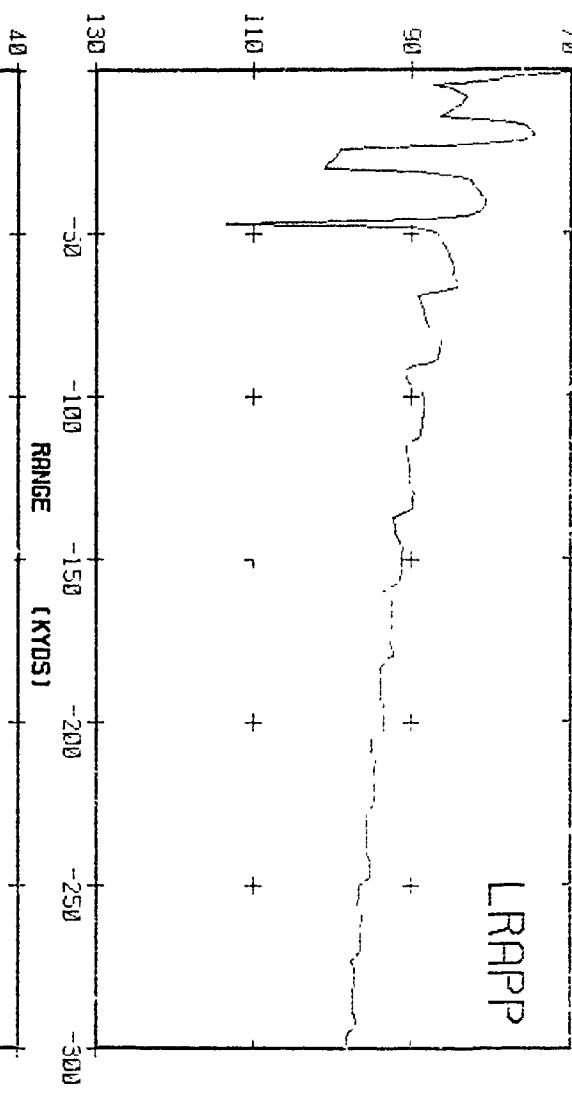
AREA 3A SUMMER

S 233 R 302 F 620

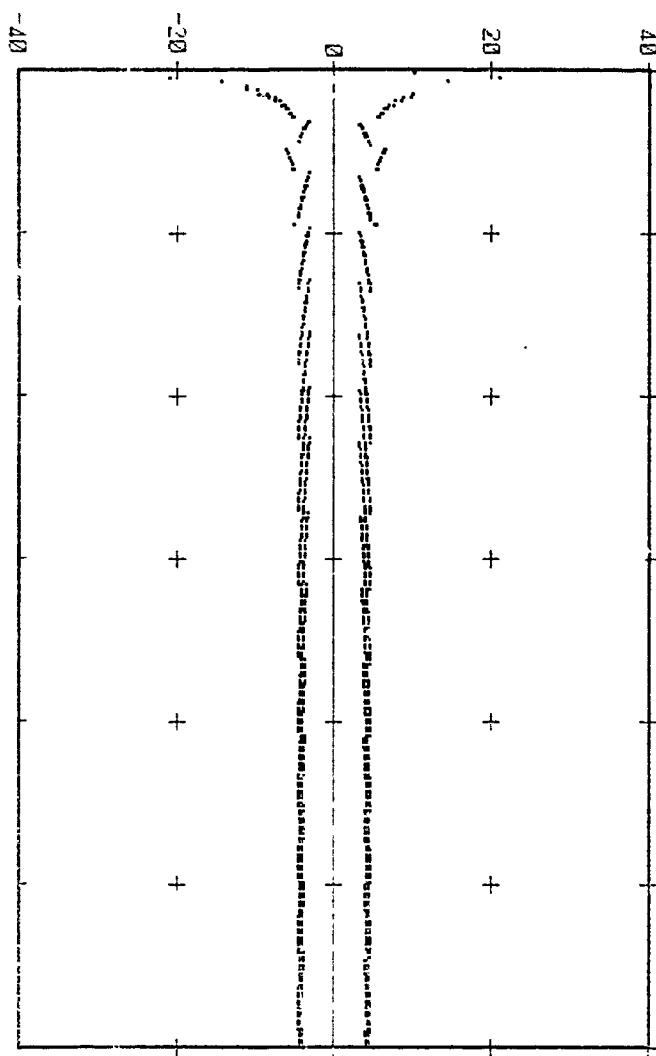
1450 M/S 1500 1550

LRAPP

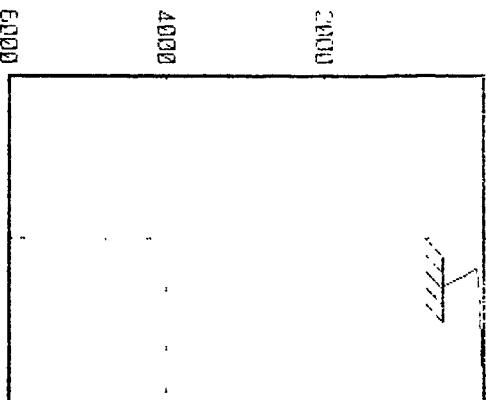
DB LOSS



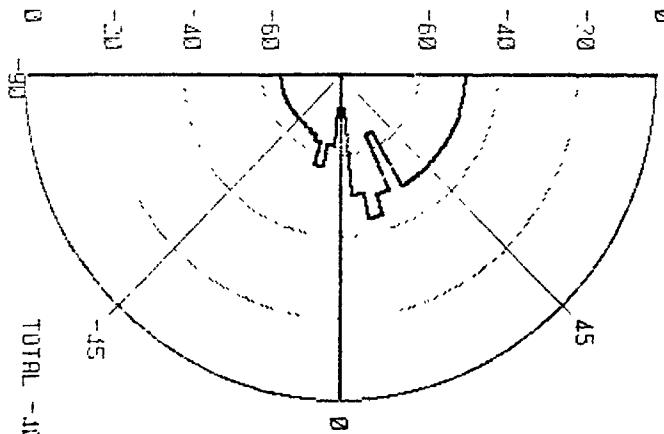
ARRIVAL ANGLE

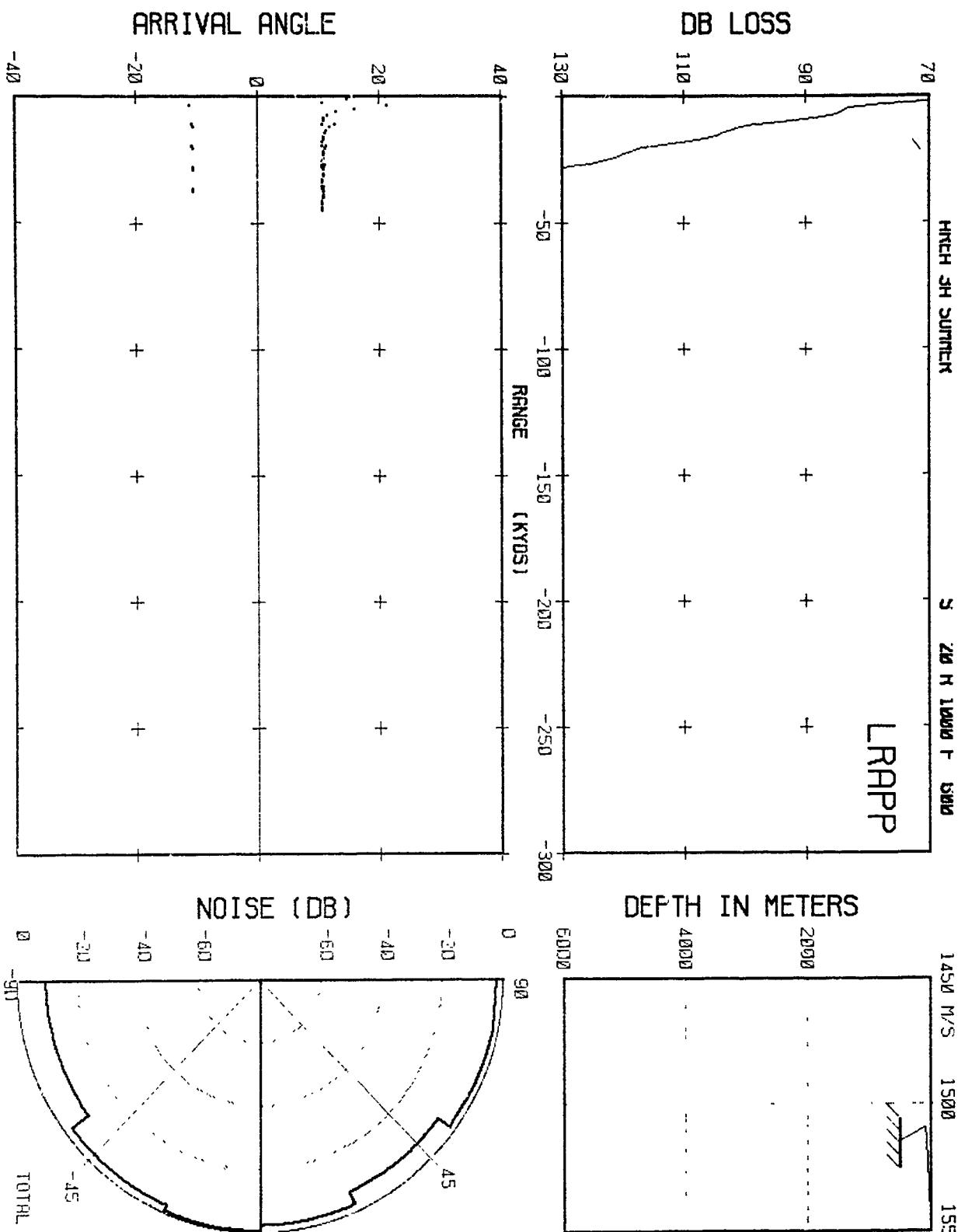


DEPTH IN METERS



NOISE (DB)





70

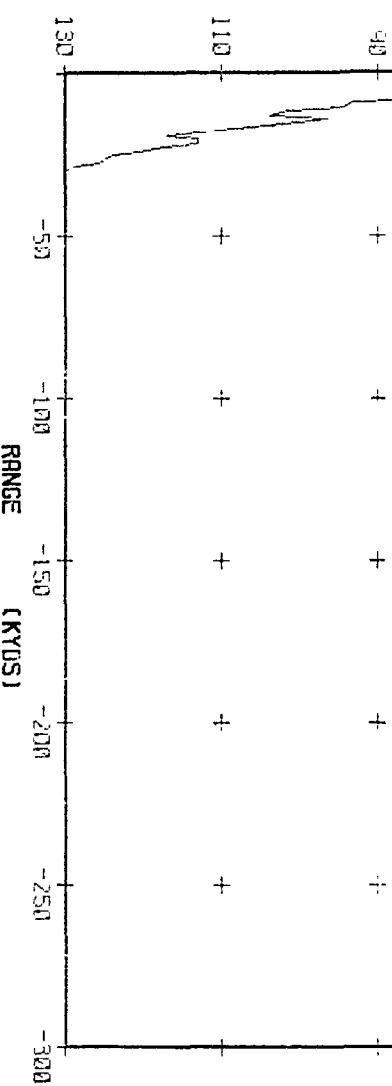
RER 3A SUMMER

S 52 R 162 F 655

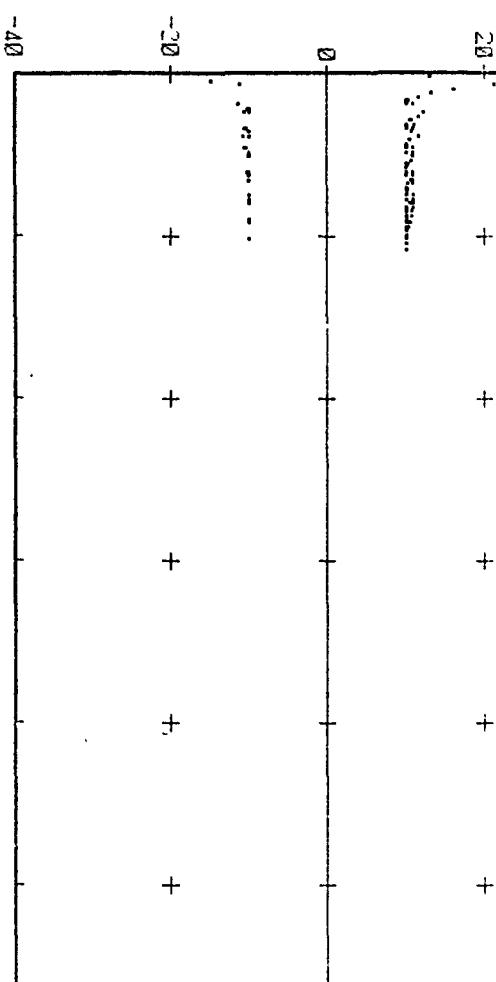
1450 1475 1500 1550

LRAPP

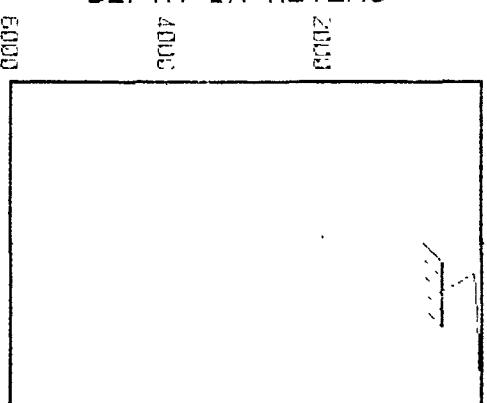
DB LOSS



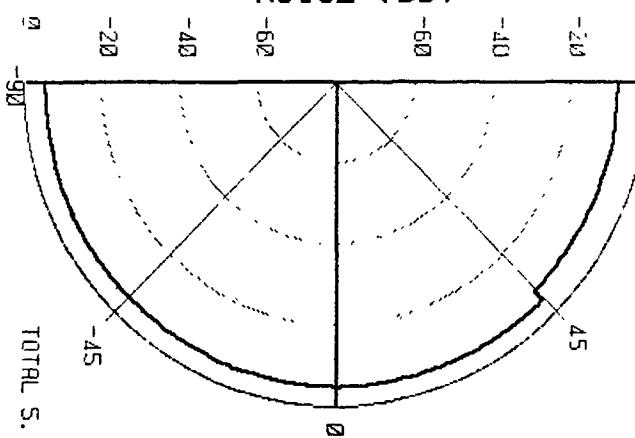
ARRIVAL ANGLE



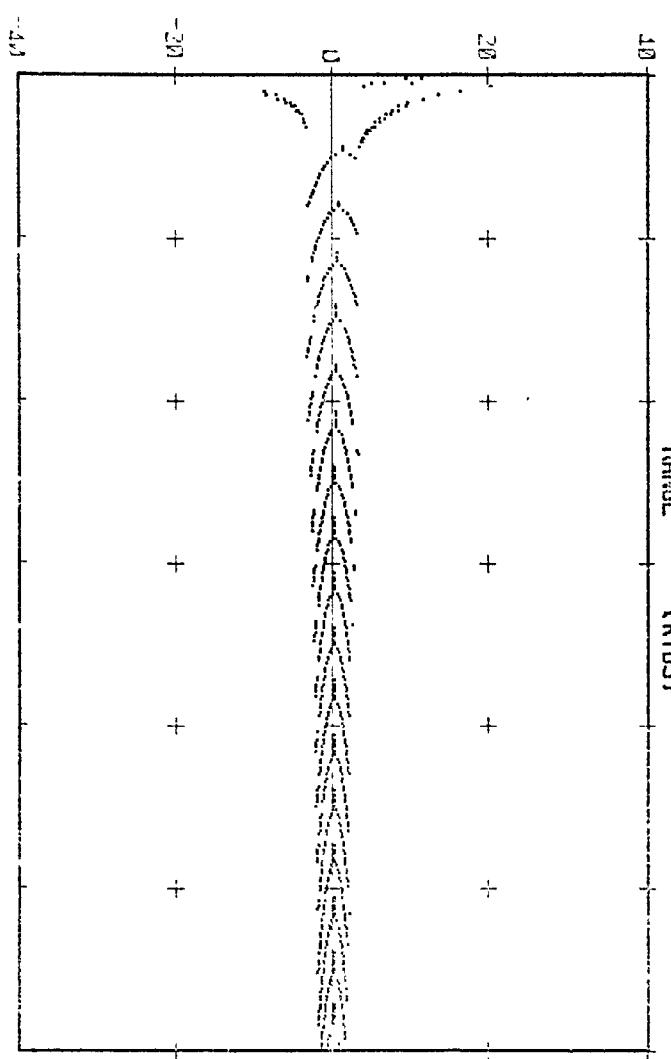
DEPTH IN METERS



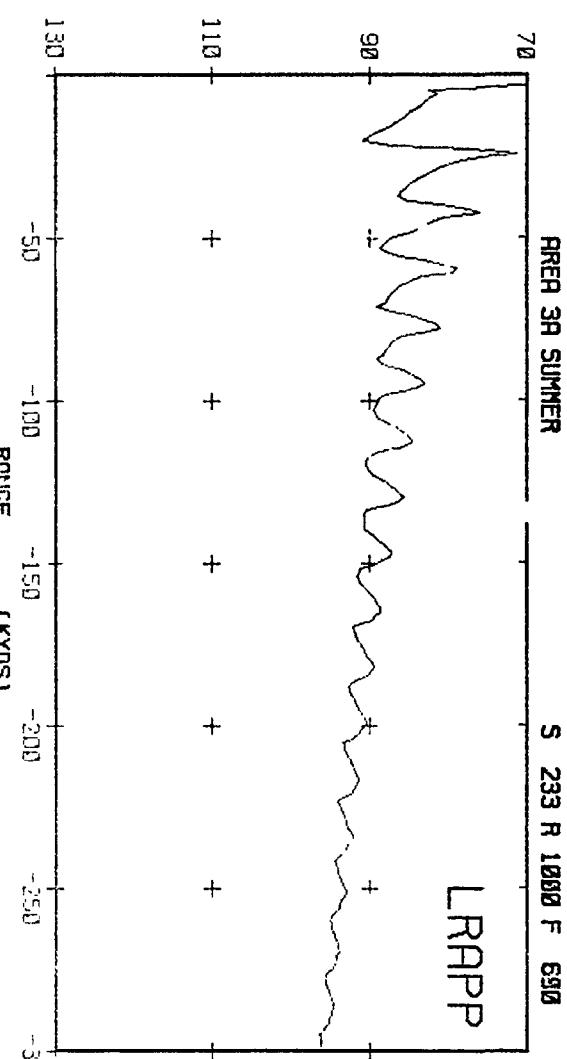
NOISE (DB)



ARRIVAL ANGLE



DB LOSS



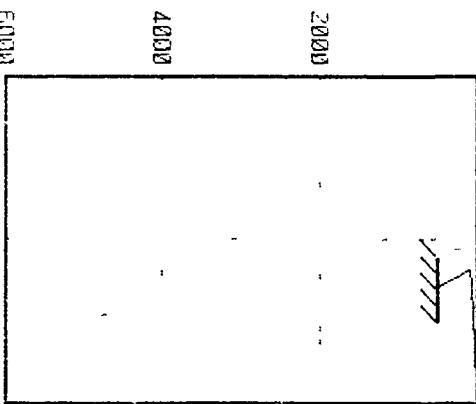
AREA 3A SUMMER

S 233 R 1000 F 650

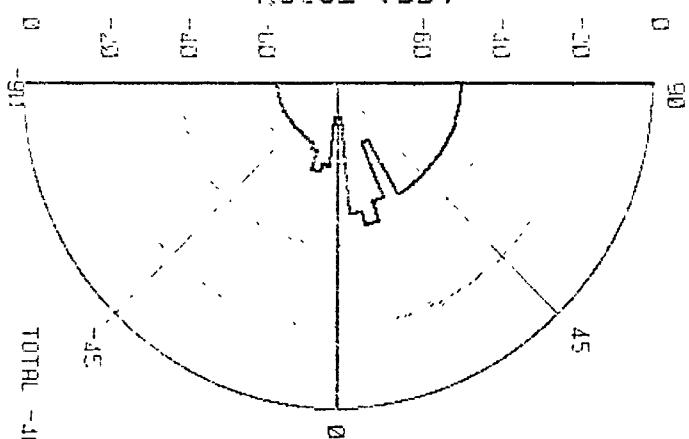
1450 M/S 1500 1550

LRAPP

DEPTH IN METERS



NOISE (DB)



70

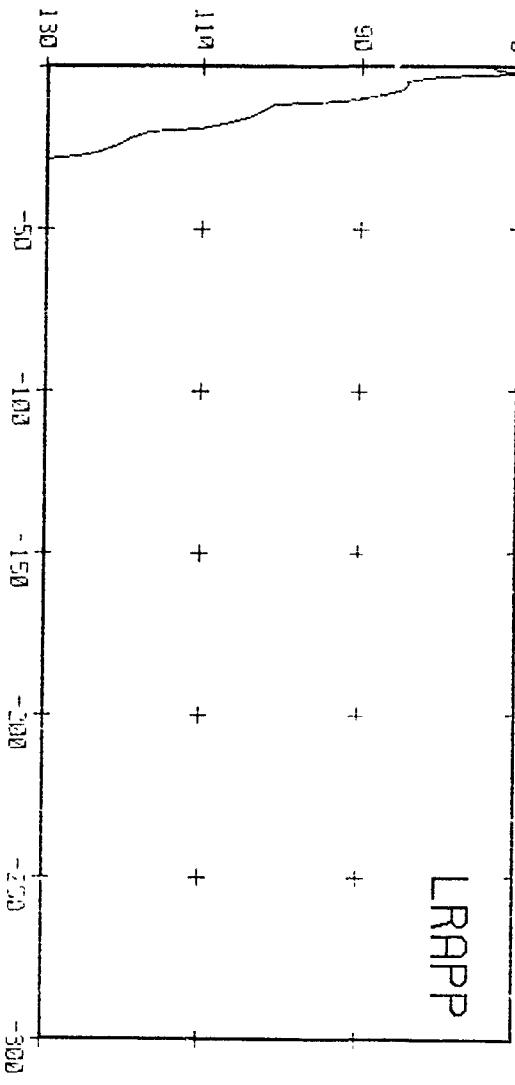
AREA 3A SUMMER

S 20 R 1500 F 600

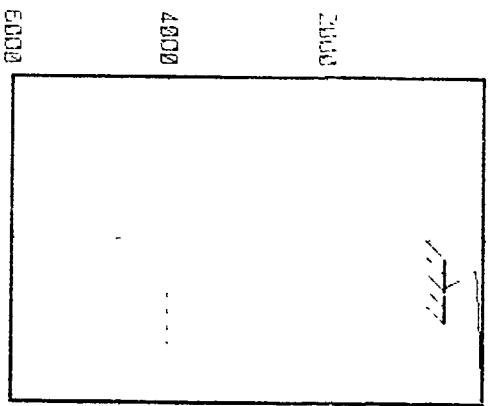
1450 115 1500 1550

LRAPP

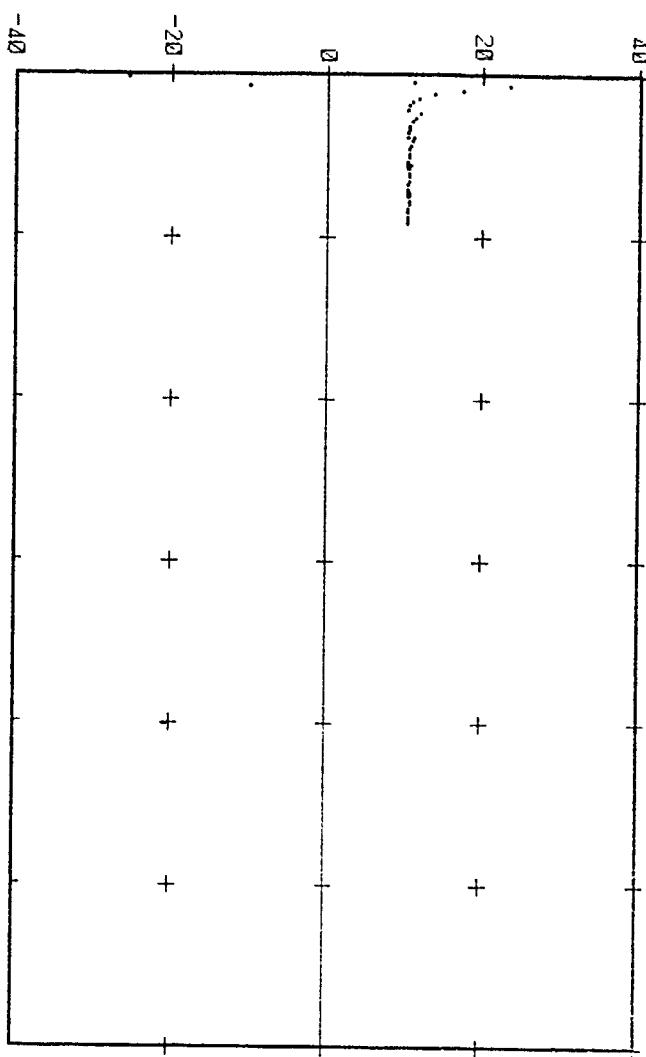
DB LOSS



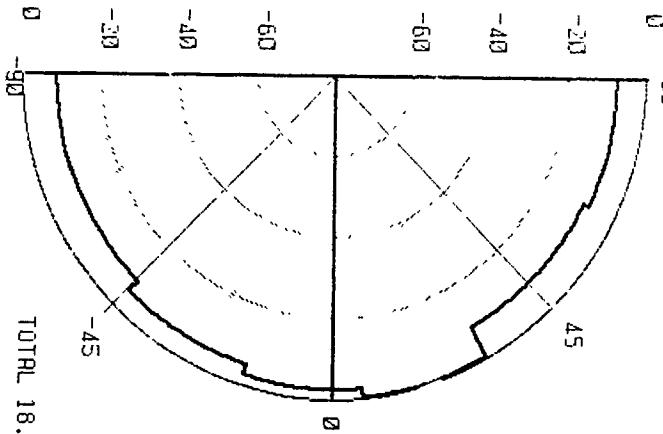
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL 18.4 DB

70

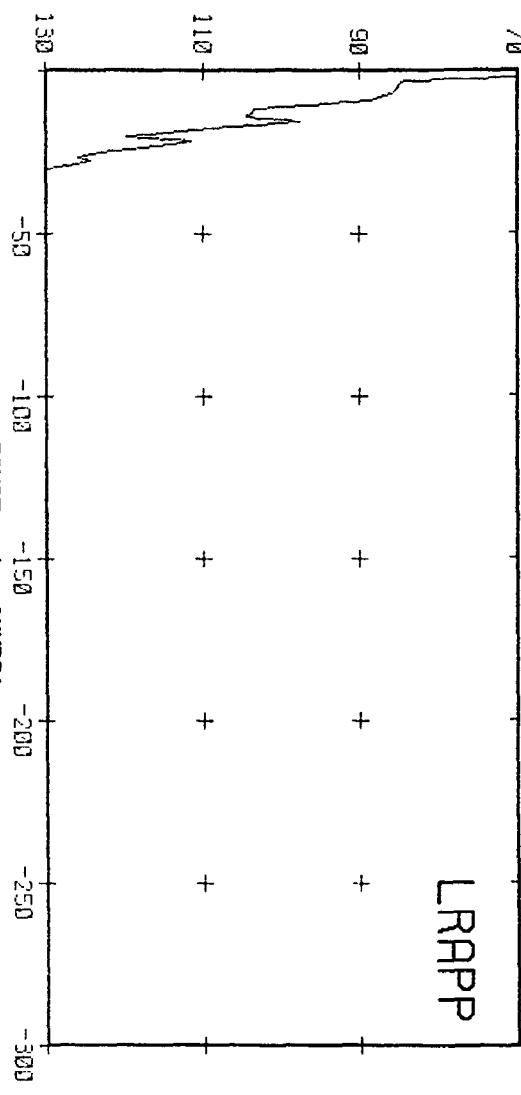
AREA 3A SUMMER

S 50 R 1500 F 600

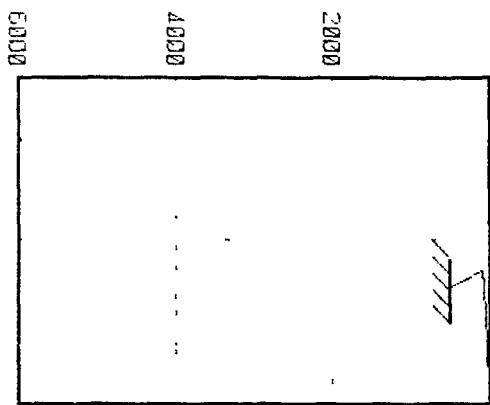
1450 M/S 1500 1550

LRAPP

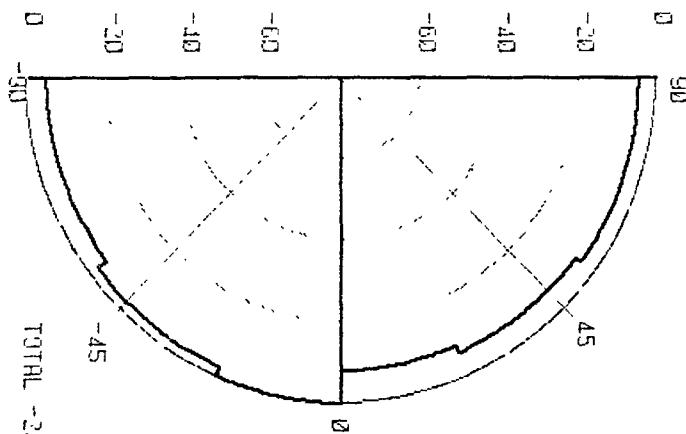
DB LOSS



DEPTH IN METERS



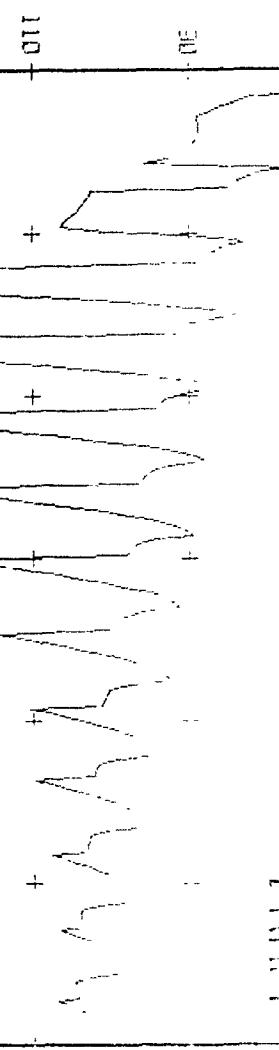
NOISE (DB)



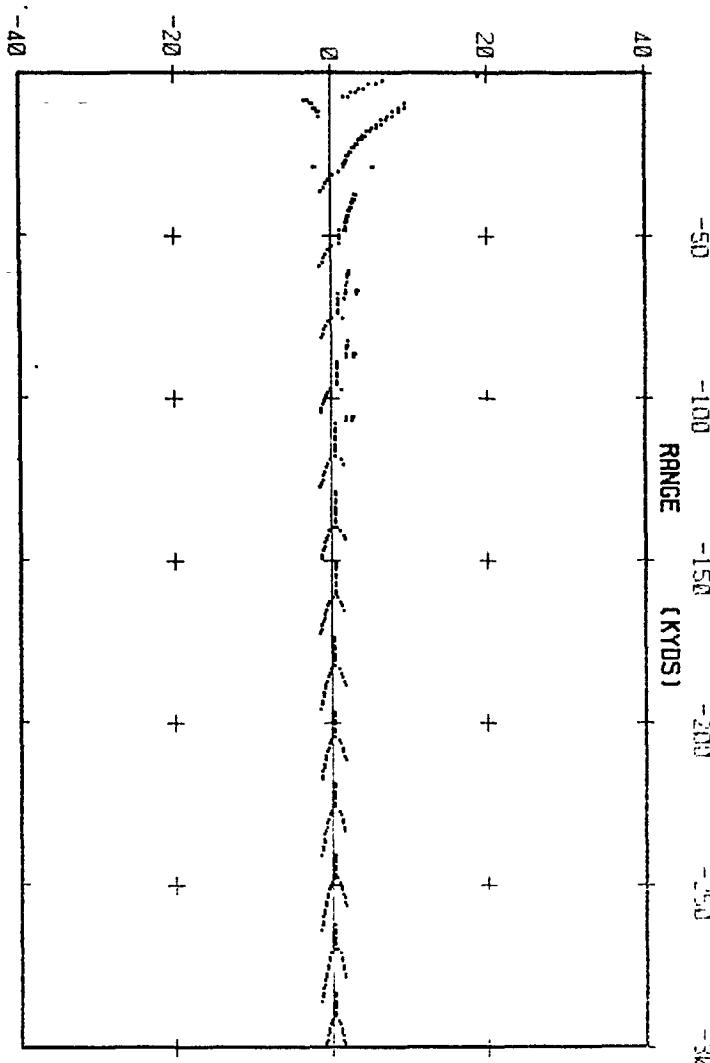
TOTAL -24.9 DB

AREA 34 Station S 233 R 1540 1550

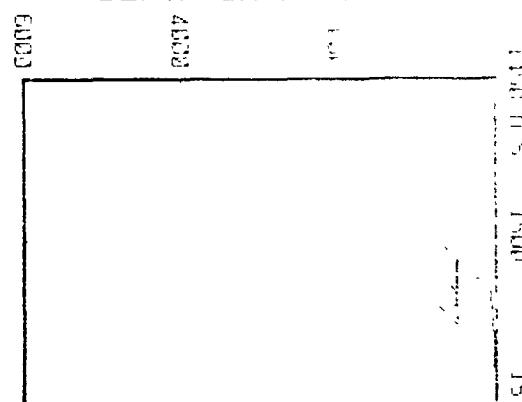
DB LOSS



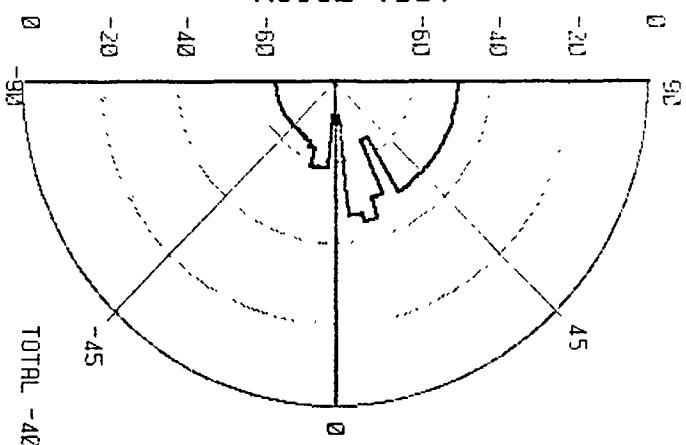
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -40.6 DB

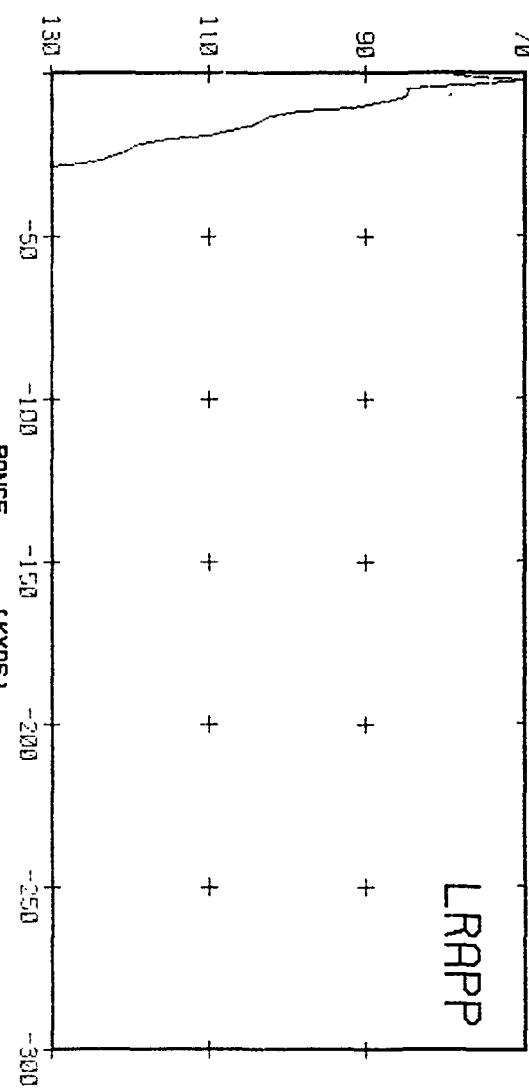
AREA 3A SUMMER

S 20 R 1640 F 600

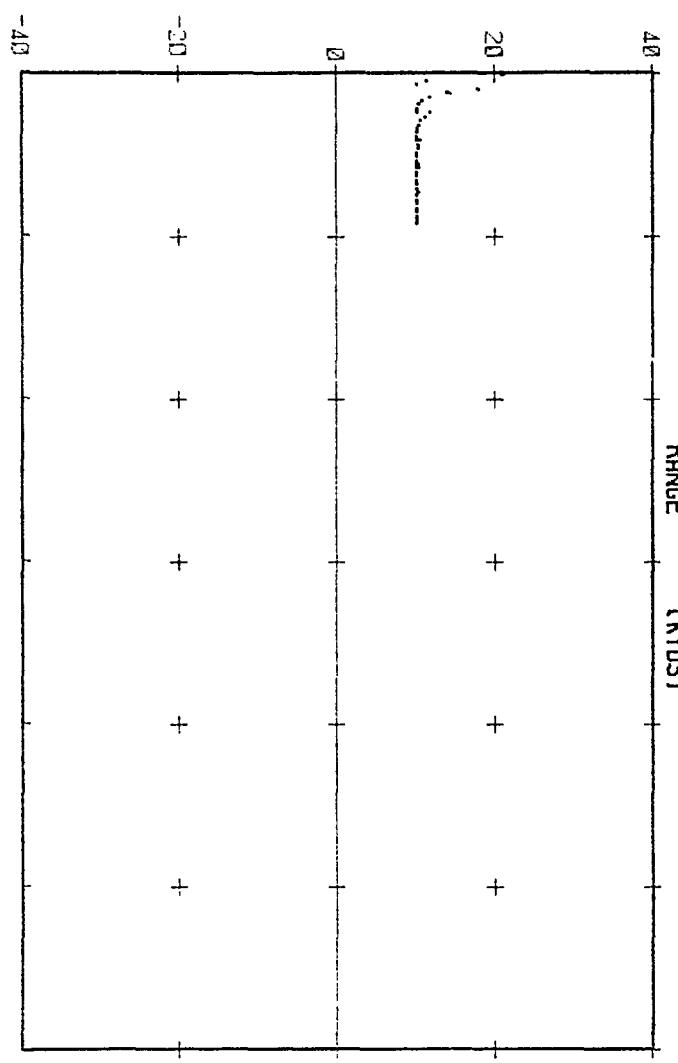
1450 M/S 1500 1550

L RAPP

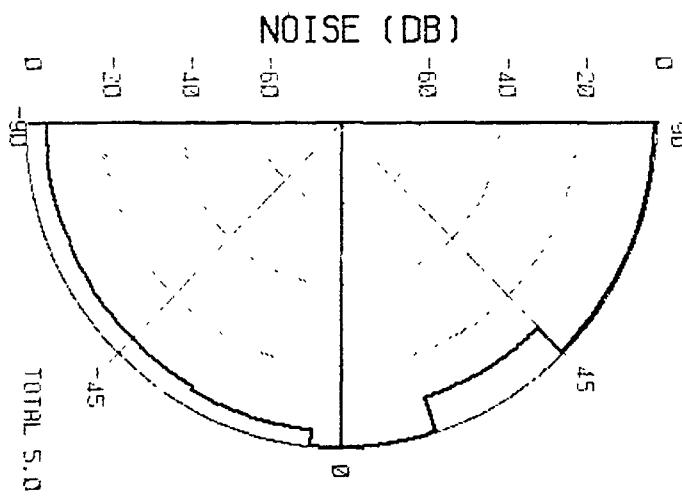
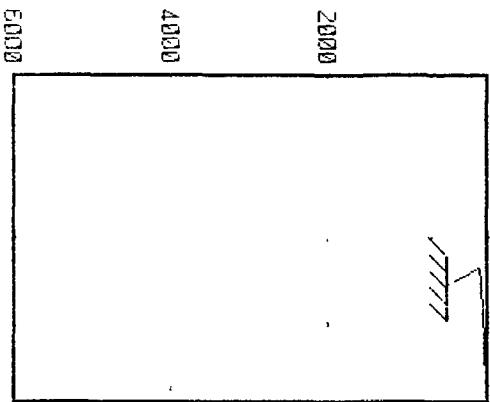
DB LOSS



ARRIVAL ANGLE



DEPTH IN METERS



DSR

70

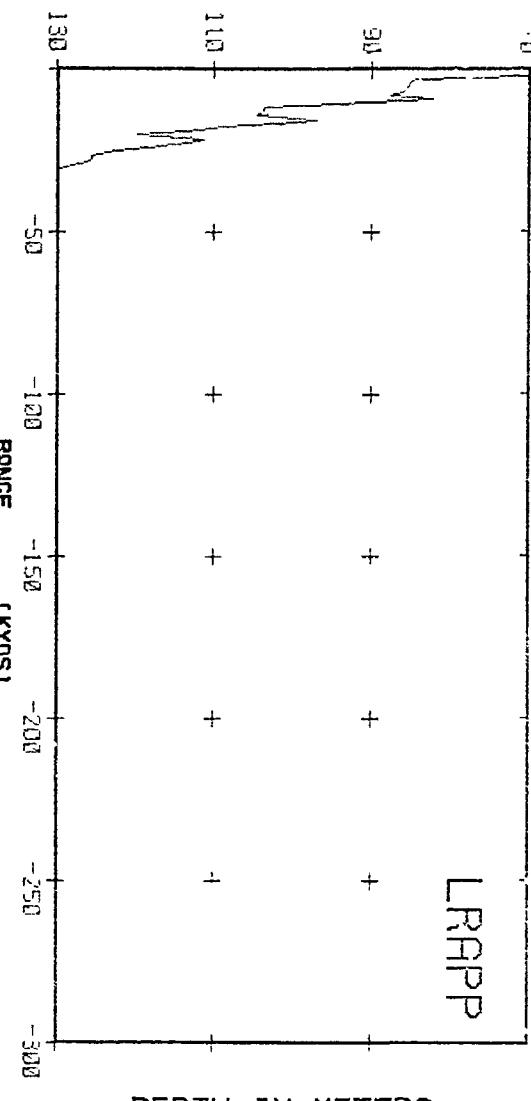
AREA 3B SUMMER

S 52 R 164 F 600

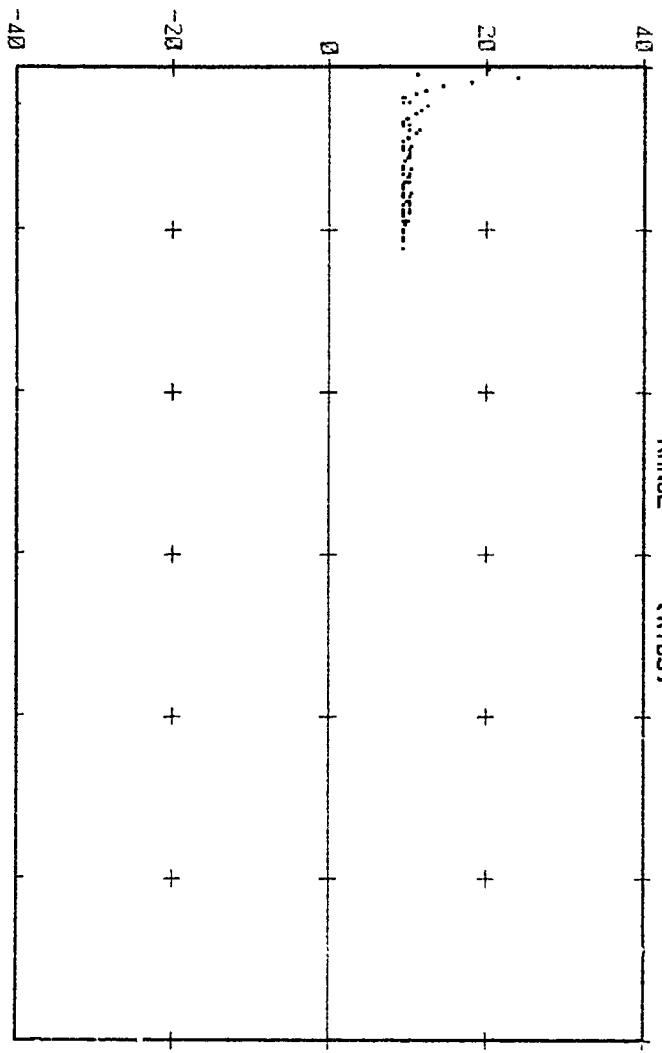
1450 145 1500 1550

LRAPP

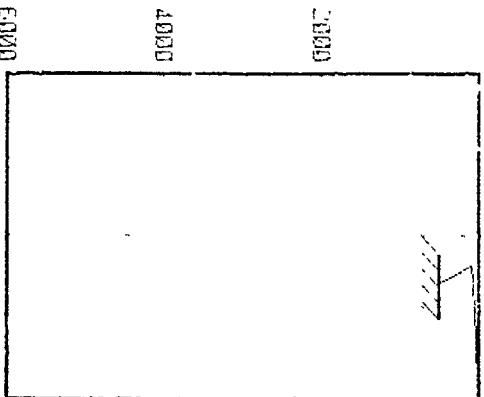
DB LOSS



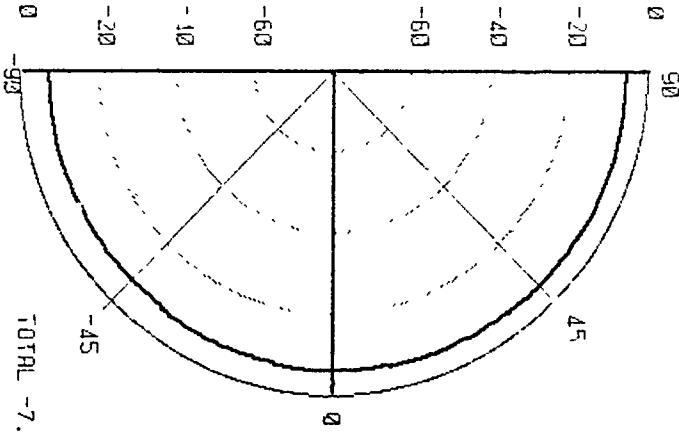
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

AREA 3A SUMMER

S 233 R 164E F 650

1450

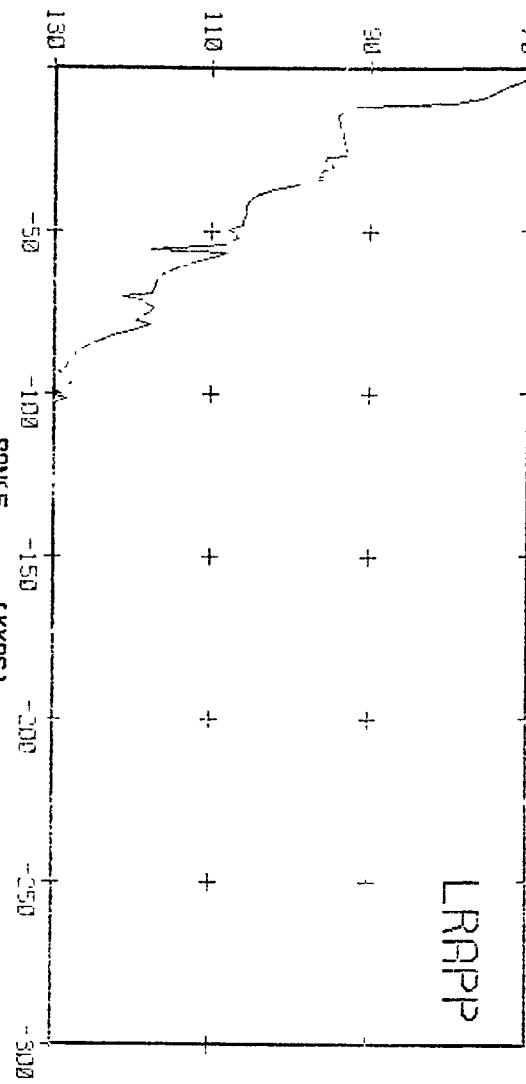
11/5

1500

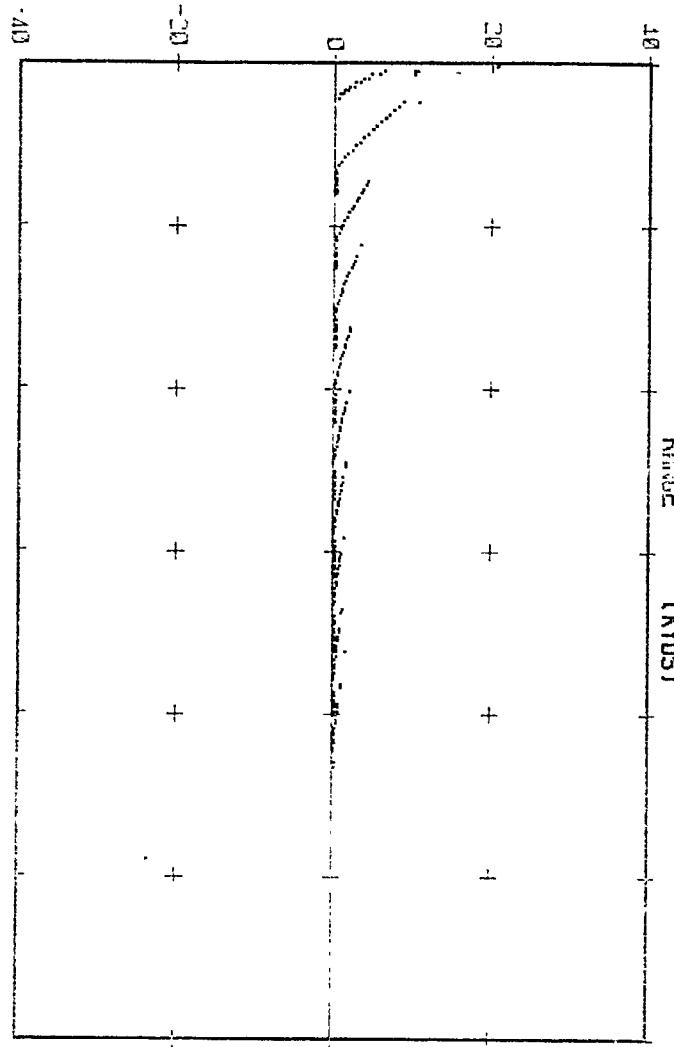
-1550

LRAPP

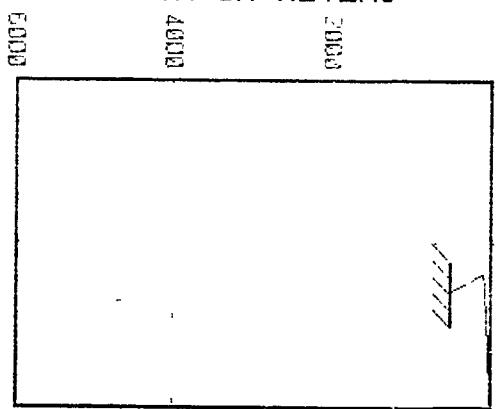
DB LOSS



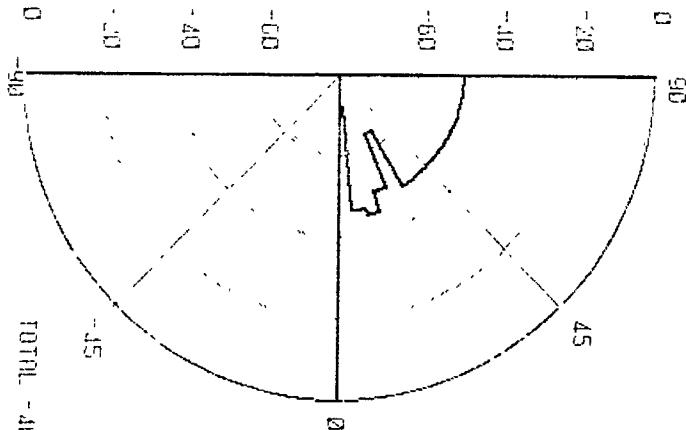
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL - AUS 08

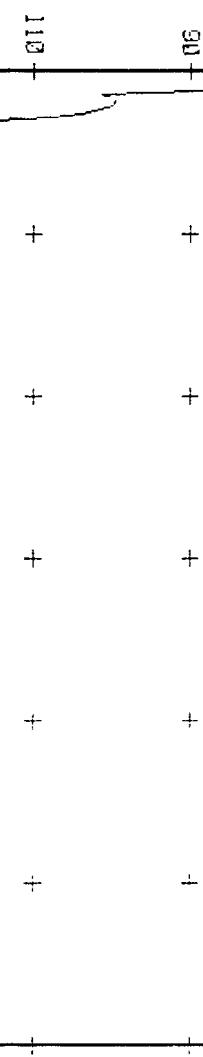
AREA 3A SUMMER

S 26 R 62 F 925

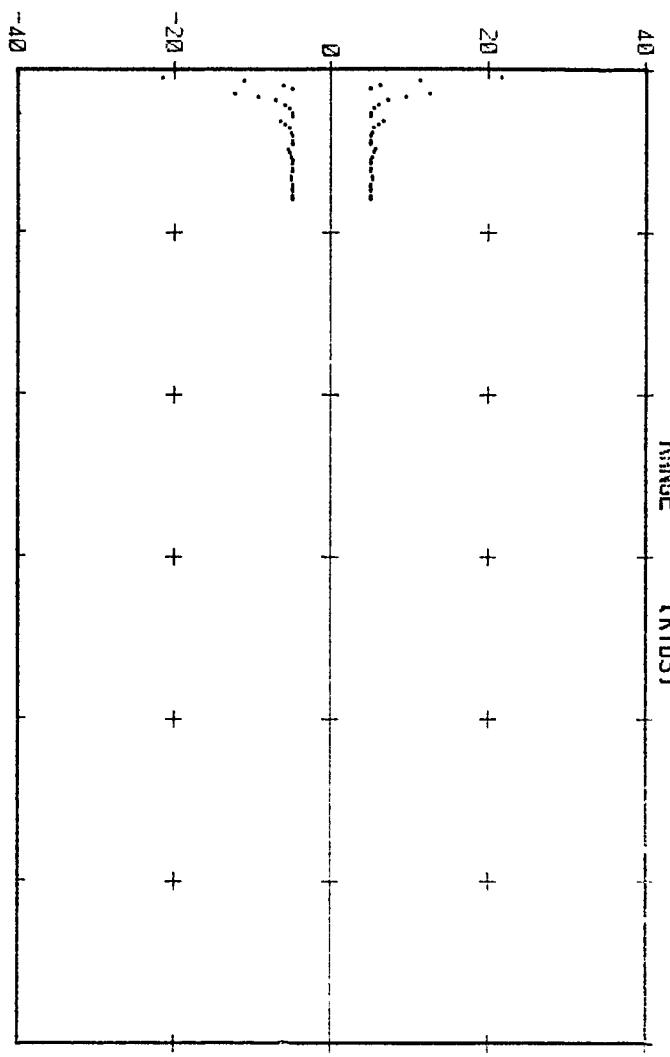
1450 H. S. 1520 1550

LRAFP

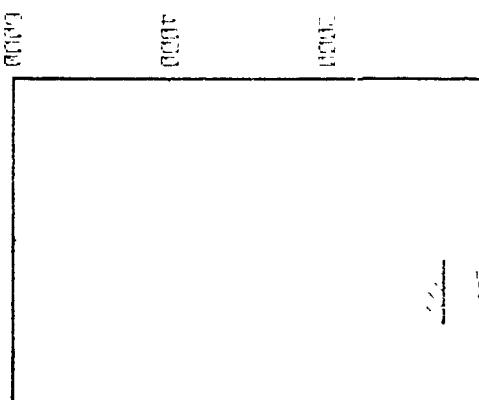
DB LOSS



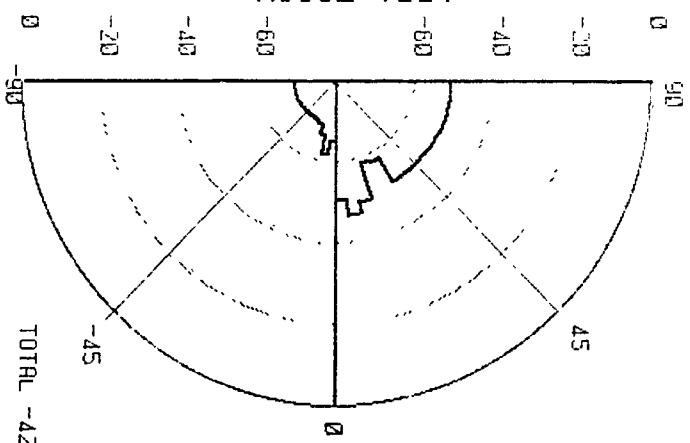
ARRIVAL ANGLE

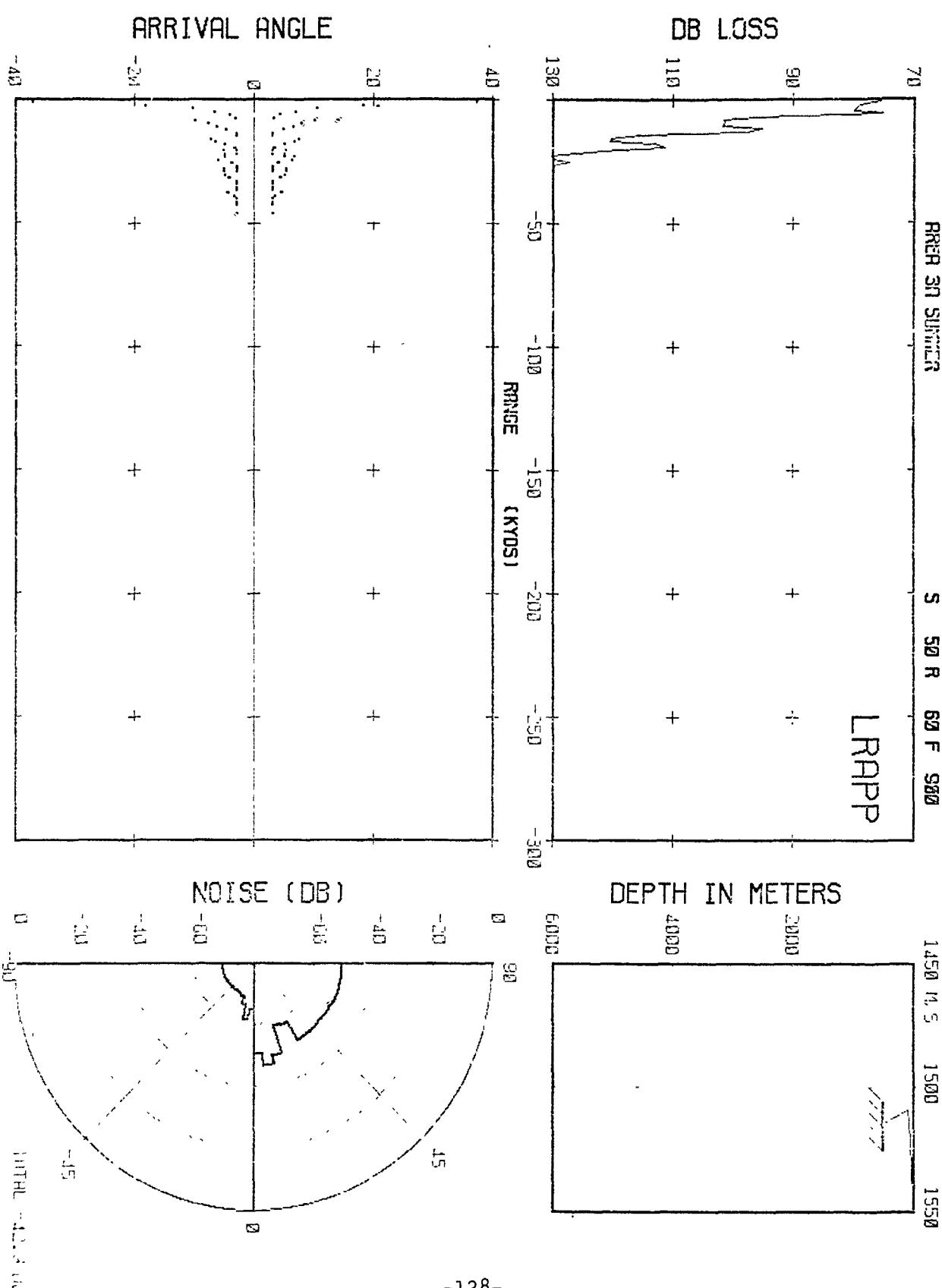


DEPTH IN METERS



NOISE (DB)





70

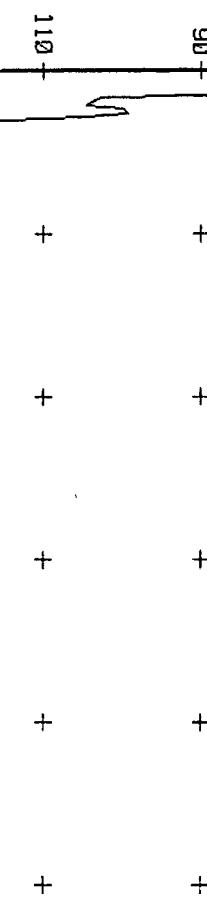
AREA 3A SUMMER

S 233 R 60 F 900

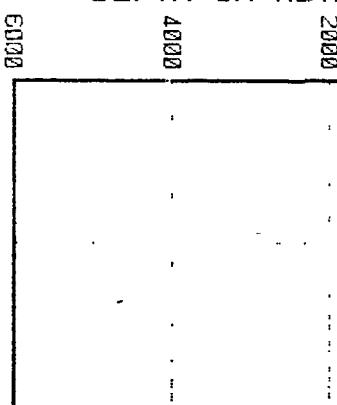
1450 M/S 1500 1550

LRAPP

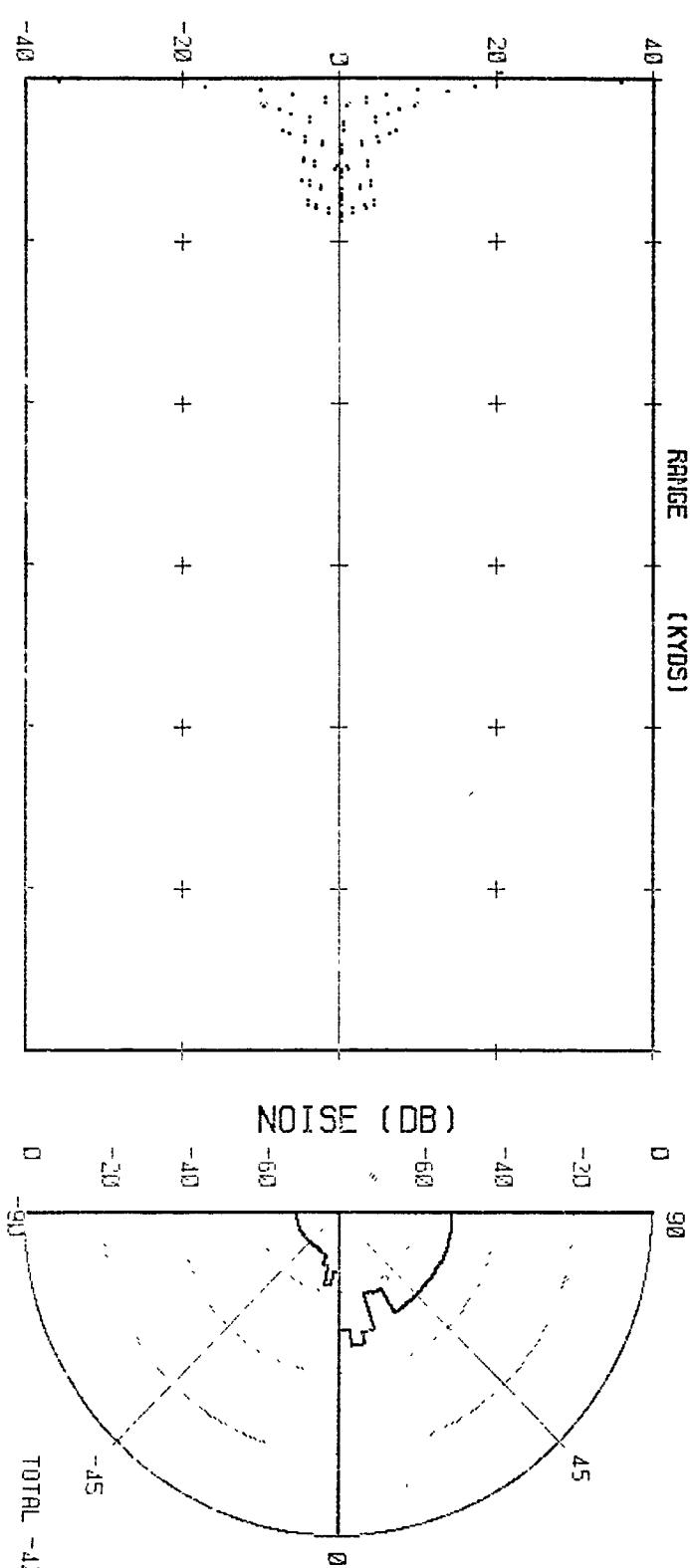
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -42.3 DB

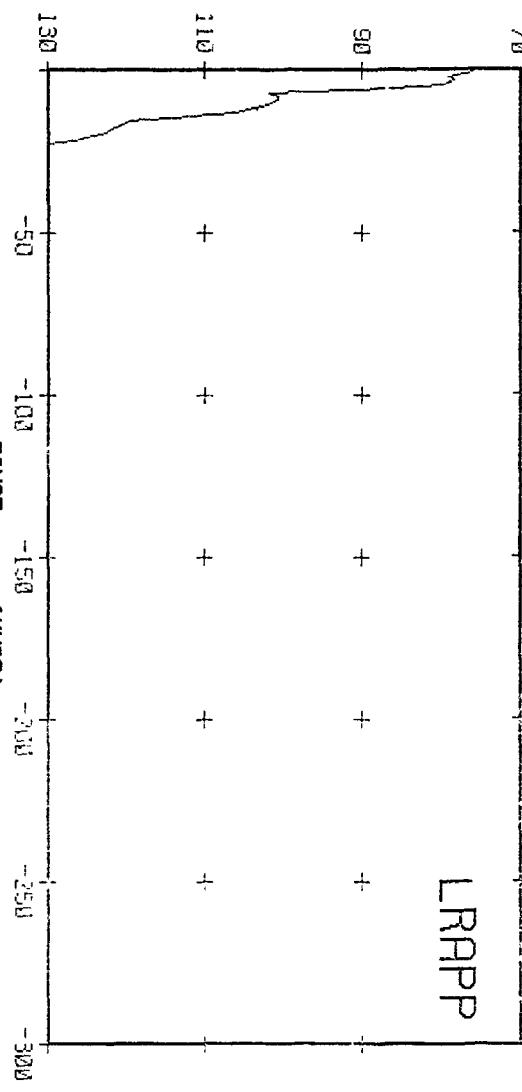
AREA 3A SUMMER

S 20 R 133 F 950

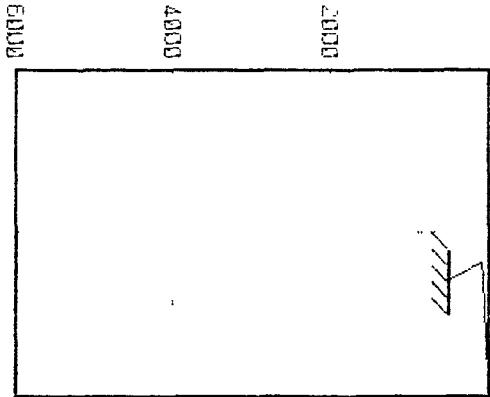
1450 1475 1500 1550

LRAAPP

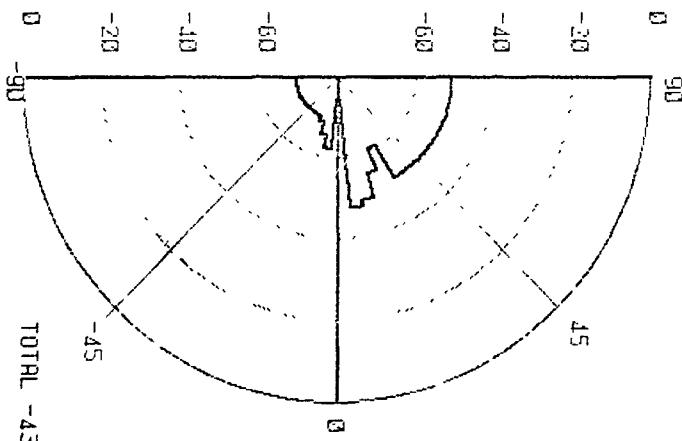
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -43.4 DB

70

AREA 3A SUMMER

S 50 R 133 F 900

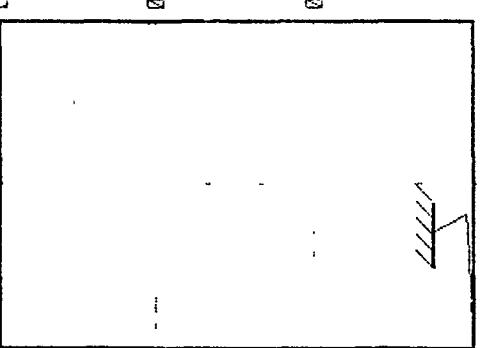
1450 M/S 1500 1550

LRAPP

DB LOSS

130
110
90
-50
-100
-150
-200
-250
-30040
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
-280
-3002000
4000
6000
8000

DEPTH IN METERS

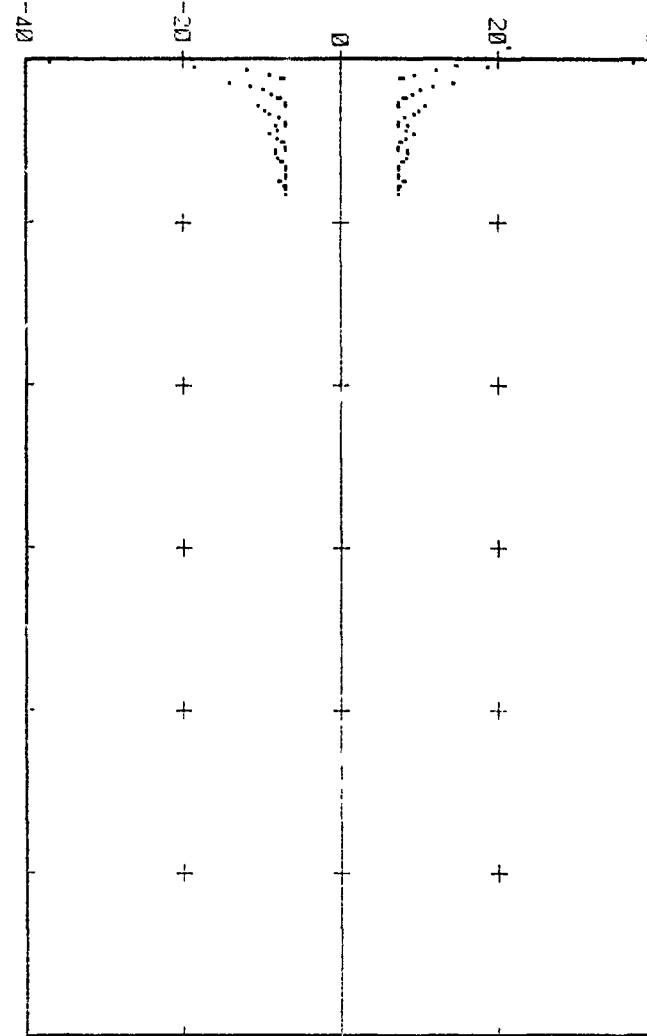
2000
4000
6000
8000

NOISE (DB)

0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
-280
-3000
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
-280
-300

TOTAL - 43.4 DB

ARRIVAL ANGLE



-40

70

ARER 3A SUMMER

S 233 R 133 F 950

1450 1500 1550

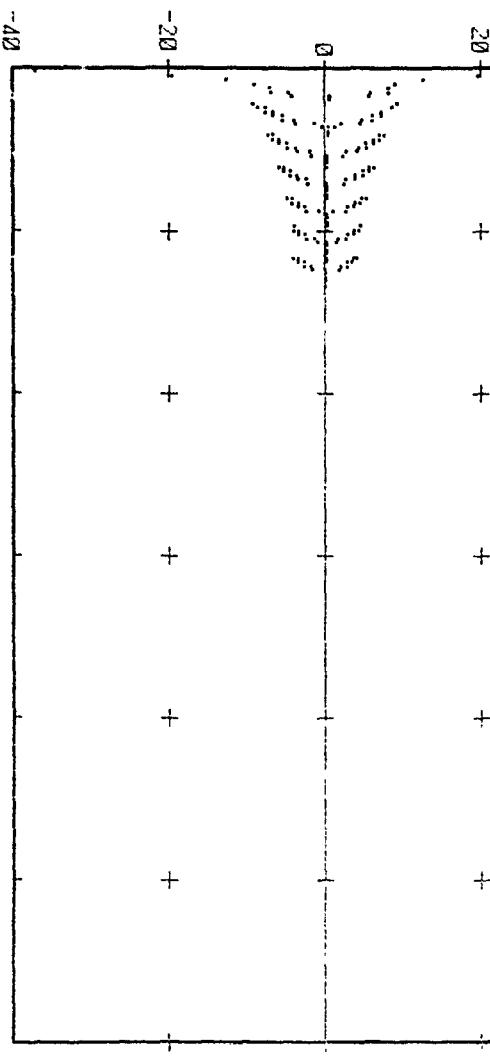
LRAPP

DB LOSS

130
110
90
70
50
30
10
0

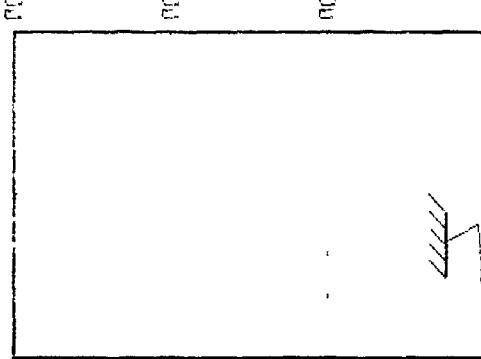
RANGE (KNOTS)

ARRIVAL ANGLE

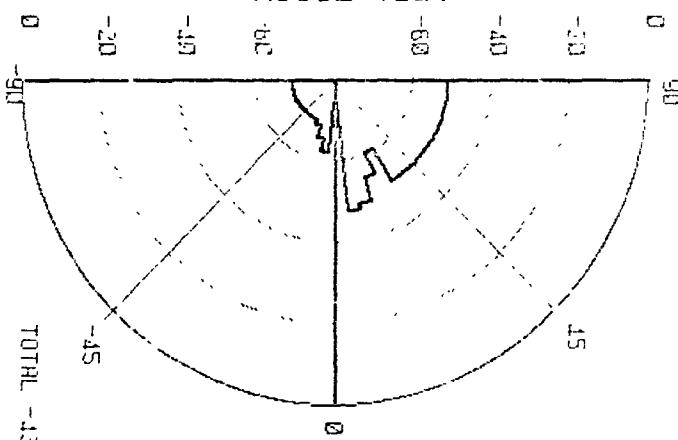


DEPTH IN METERS

10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0



NOISE (DB)



TOTAL -43.5 dB

70

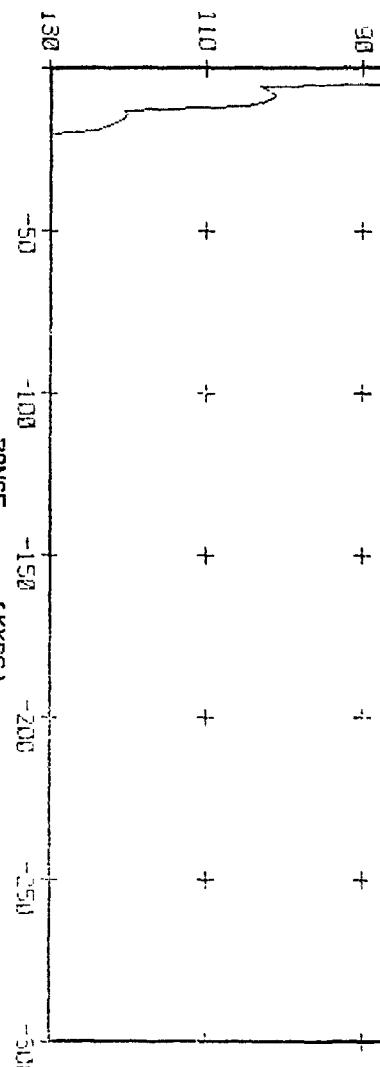
RIVER 3A SUMMER

S - 20 R 262 F 953

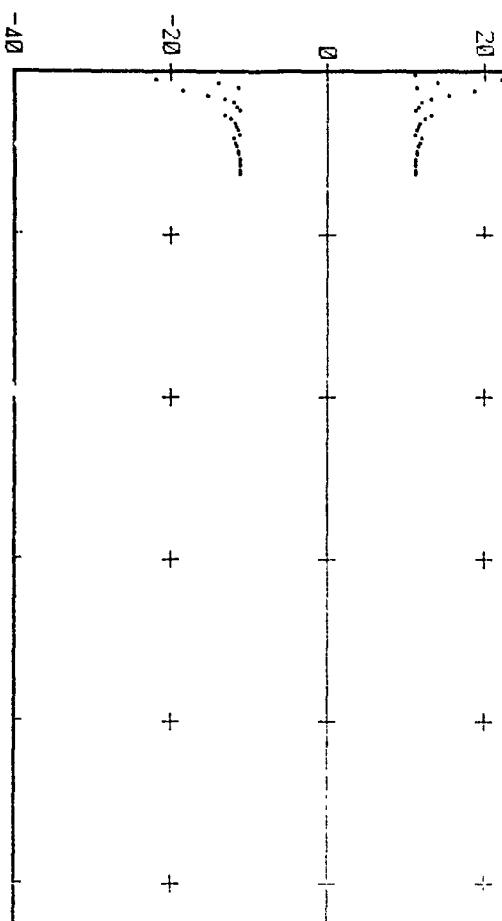
1450 M/S 150A 1550
/ / / / /

LRAPP

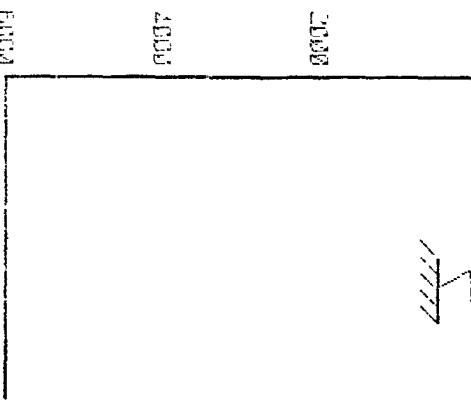
DB LOSS



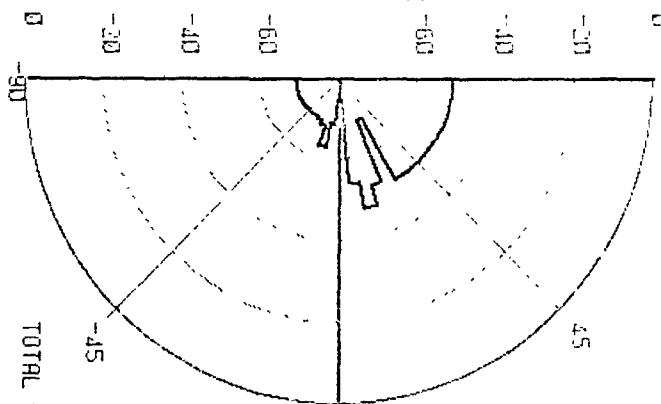
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



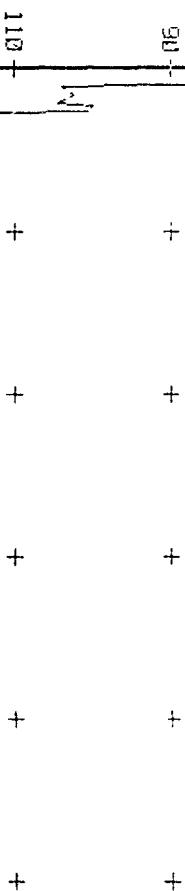
RIVER 3A SUMMER

S 50 R 262 F 200

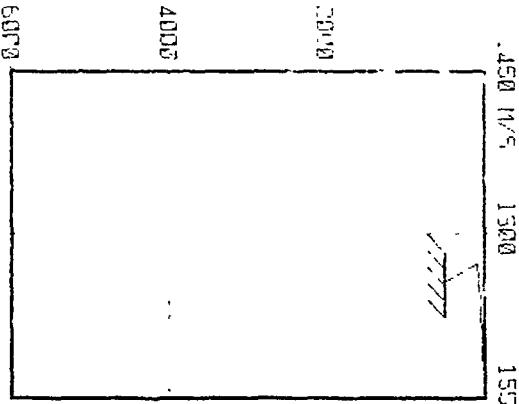
.450 11/5 1300 1550

LRAPP

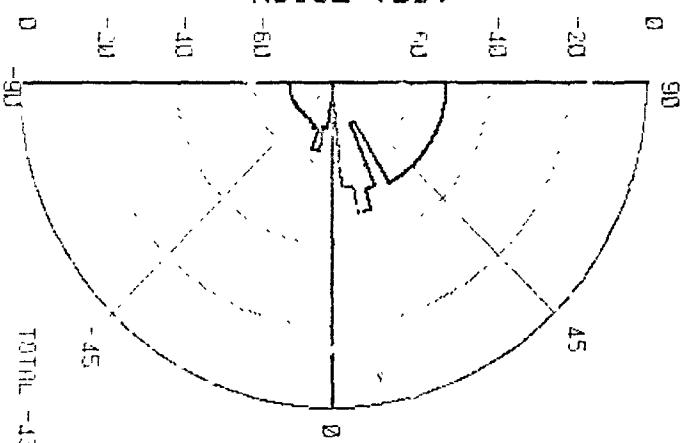
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -43.0 DS

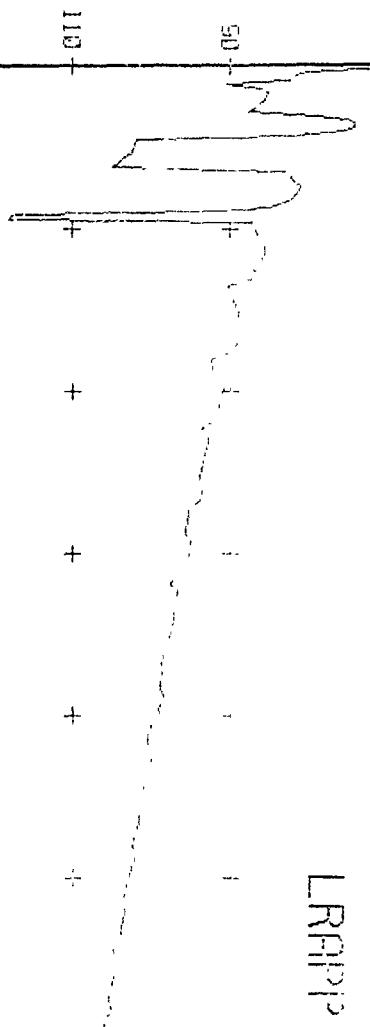
AREA 3A SUMMER

S 233 R 262 F 524

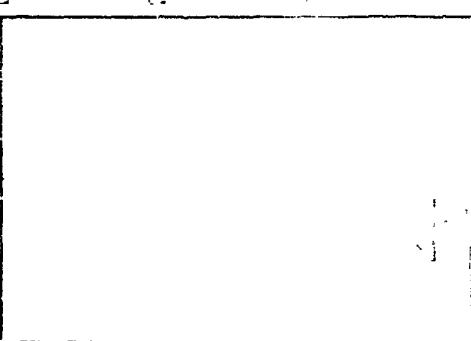
1450 H 1500 1550

LRF¹²

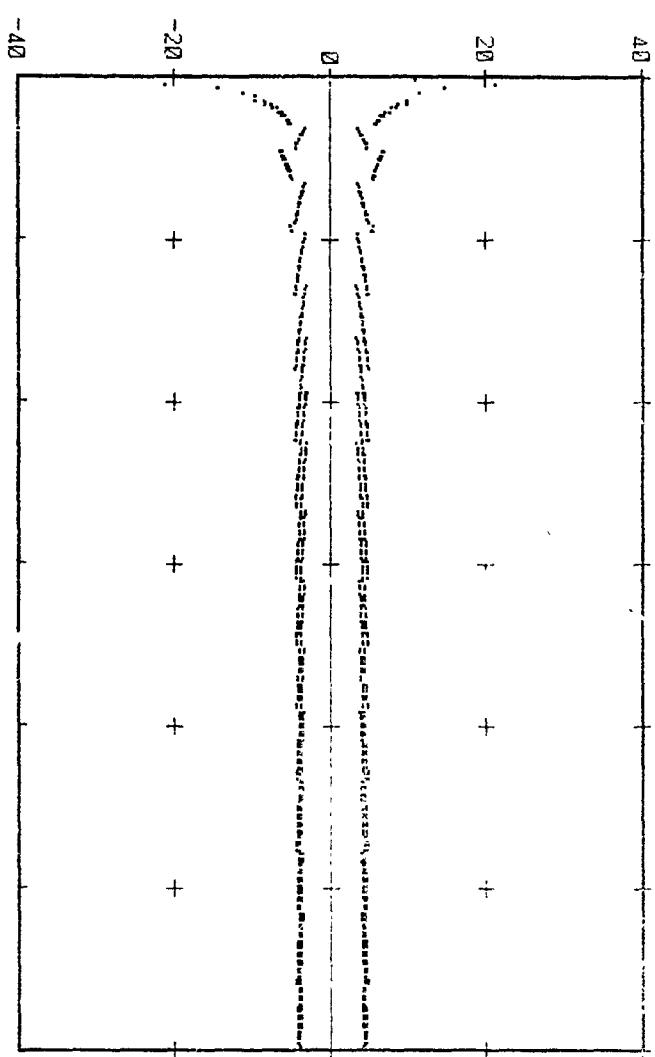
DB LOSS



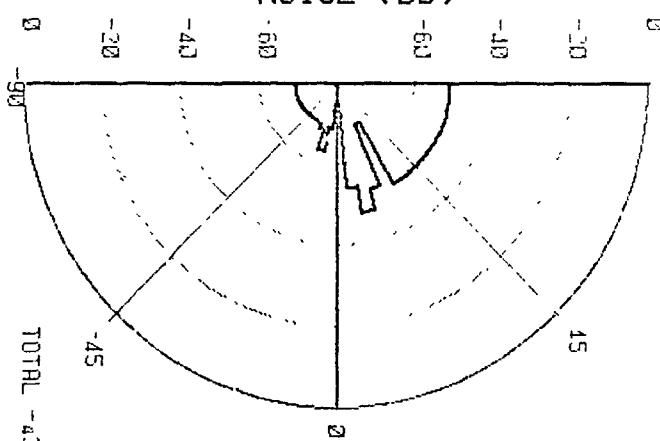
DEPTH IN METERS
MSE



ARRIVAL ANGLE



NOISE (DB)



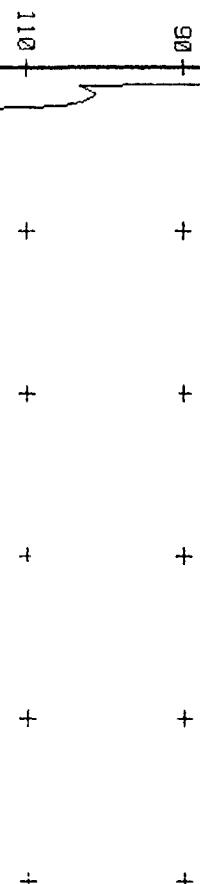
ARRER 3A SUMMER

S 20 R 300 F 900

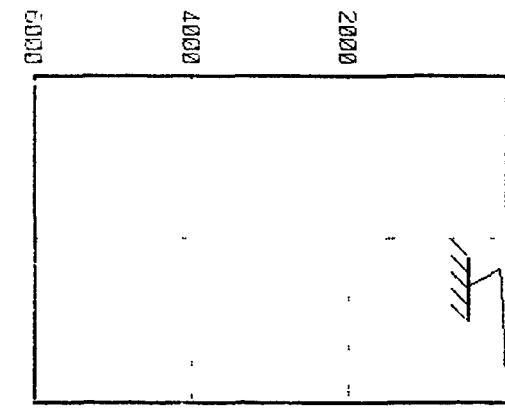
1450 M/S 1500 1550

LRAFP

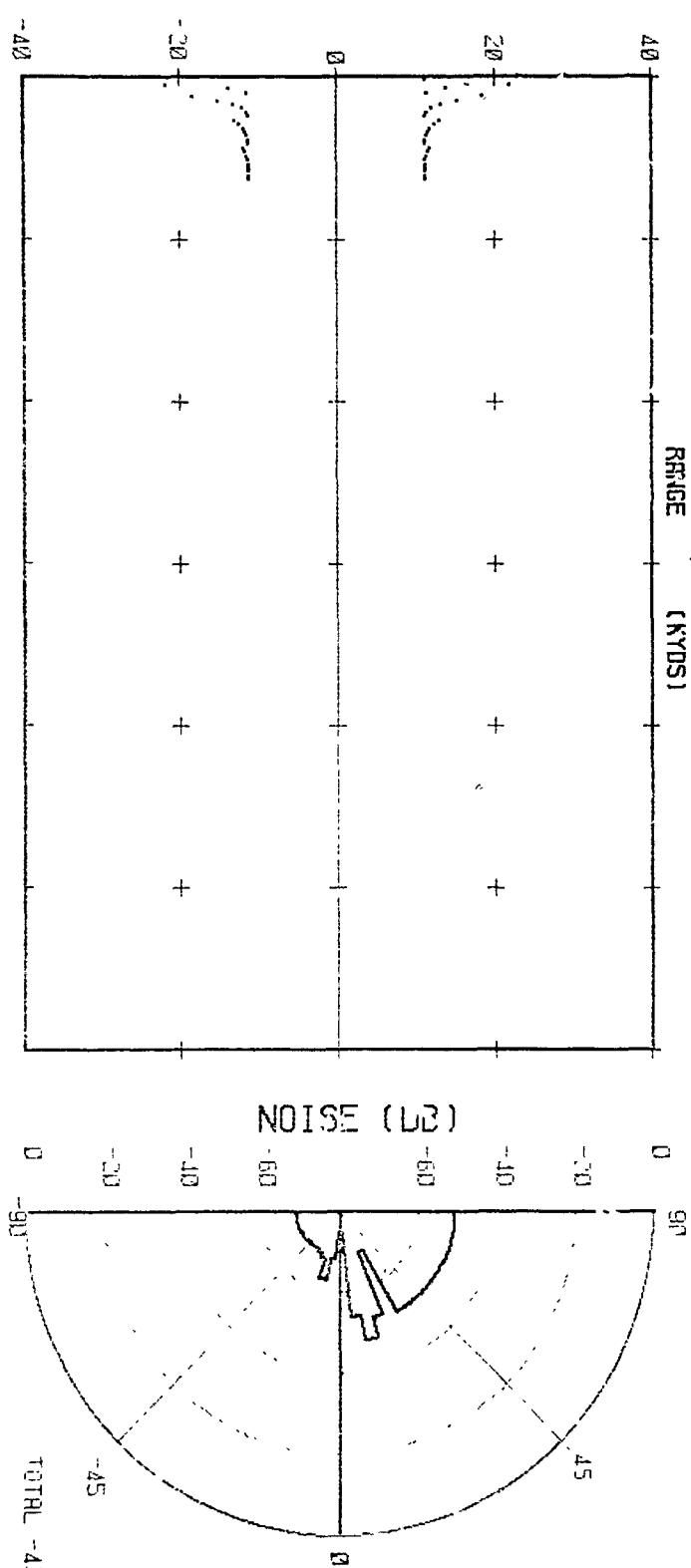
DB LOSS



DEPTH IN METERS



NOISE (dB)



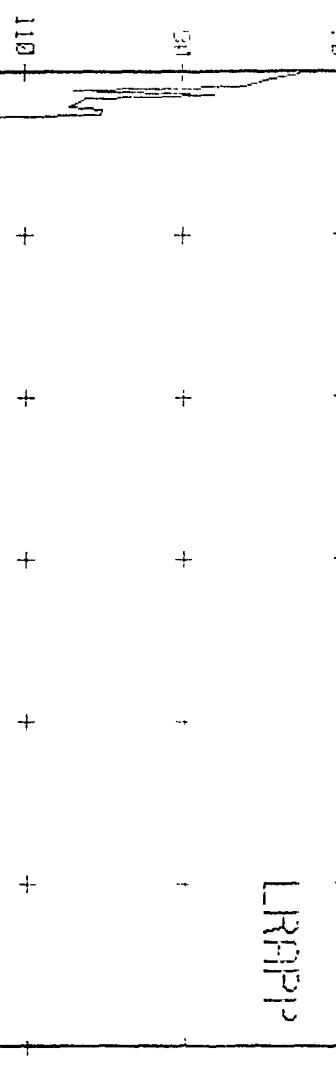
AREA 3A SUMMER

S 59 R 303 F 503

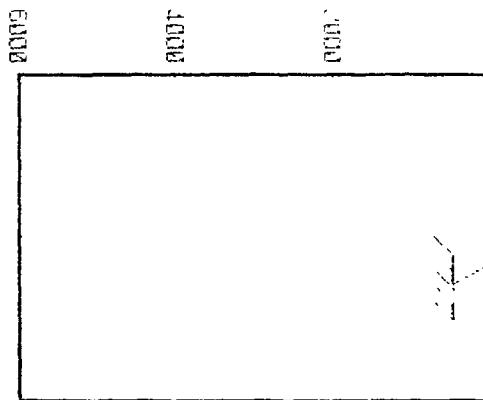
1450 M/S 1500 1550

LRRPP

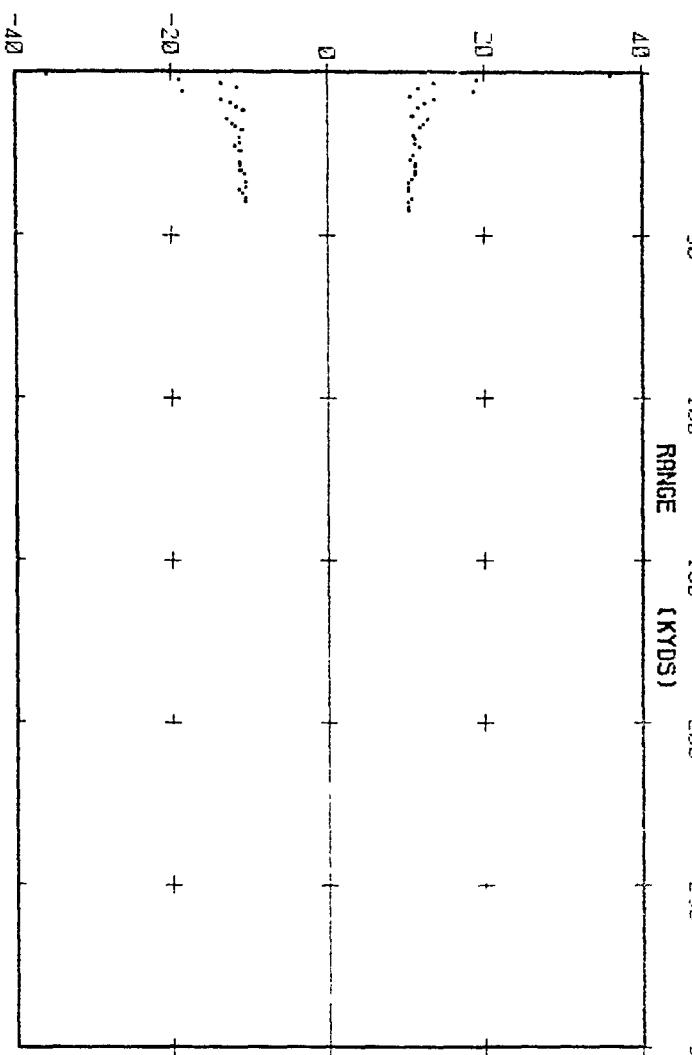
DB LOSS



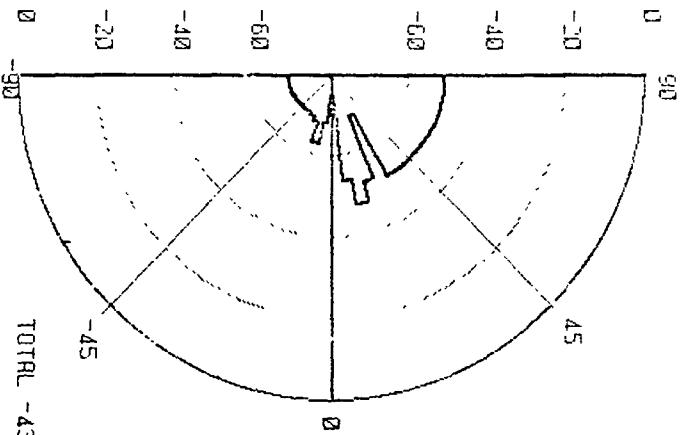
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



70

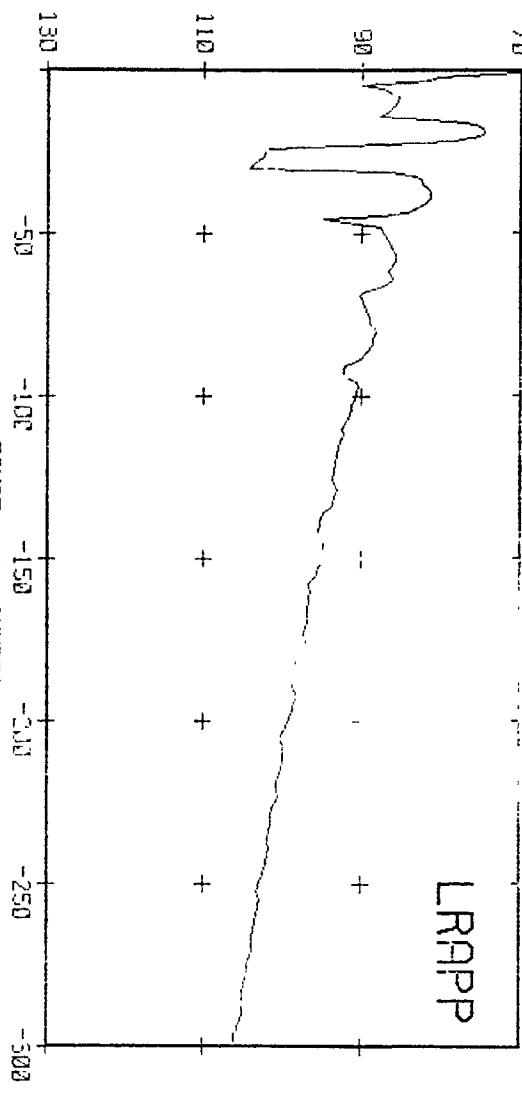
AREA 3A SUMMER

3 253 R 300 F 900

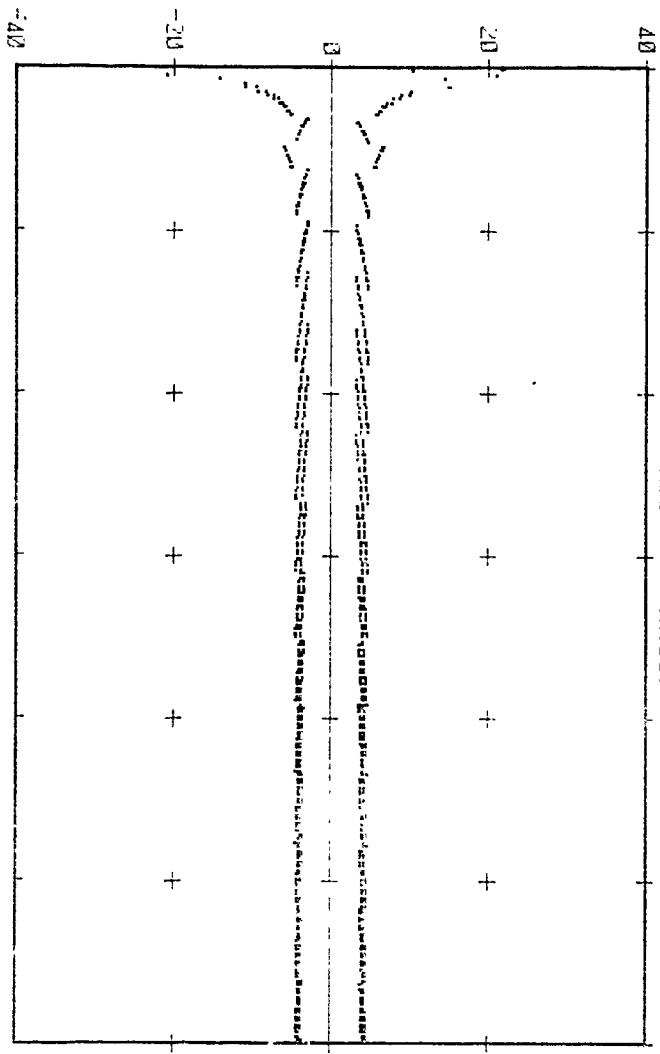
1450 M/S 1500 1550

LRAPP

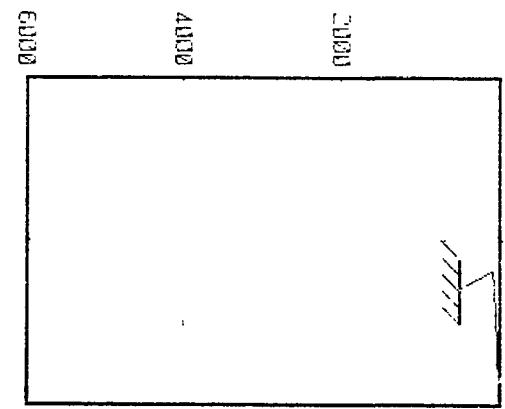
DB LOSS



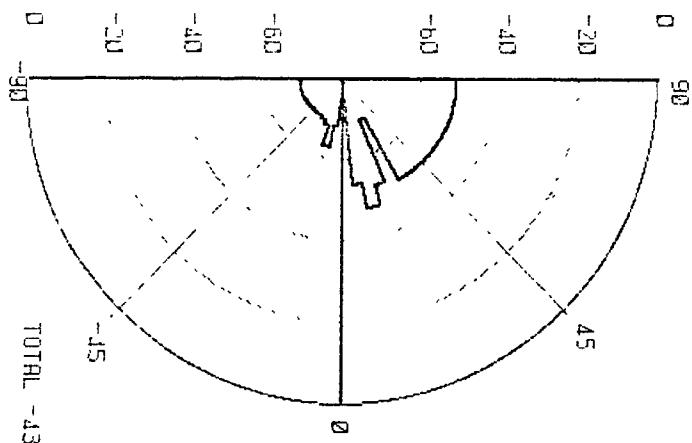
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -43.8 DB

70

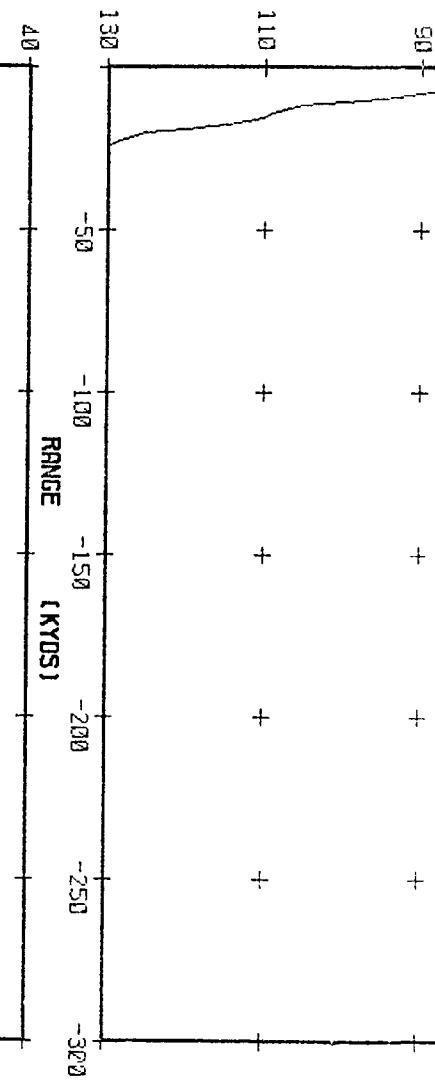
AREA 3A SUMMER

S 20 R 10E F 920

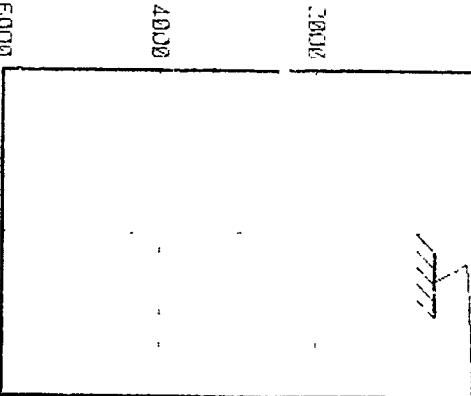
1450 M/S 1500 1550

LRAPP

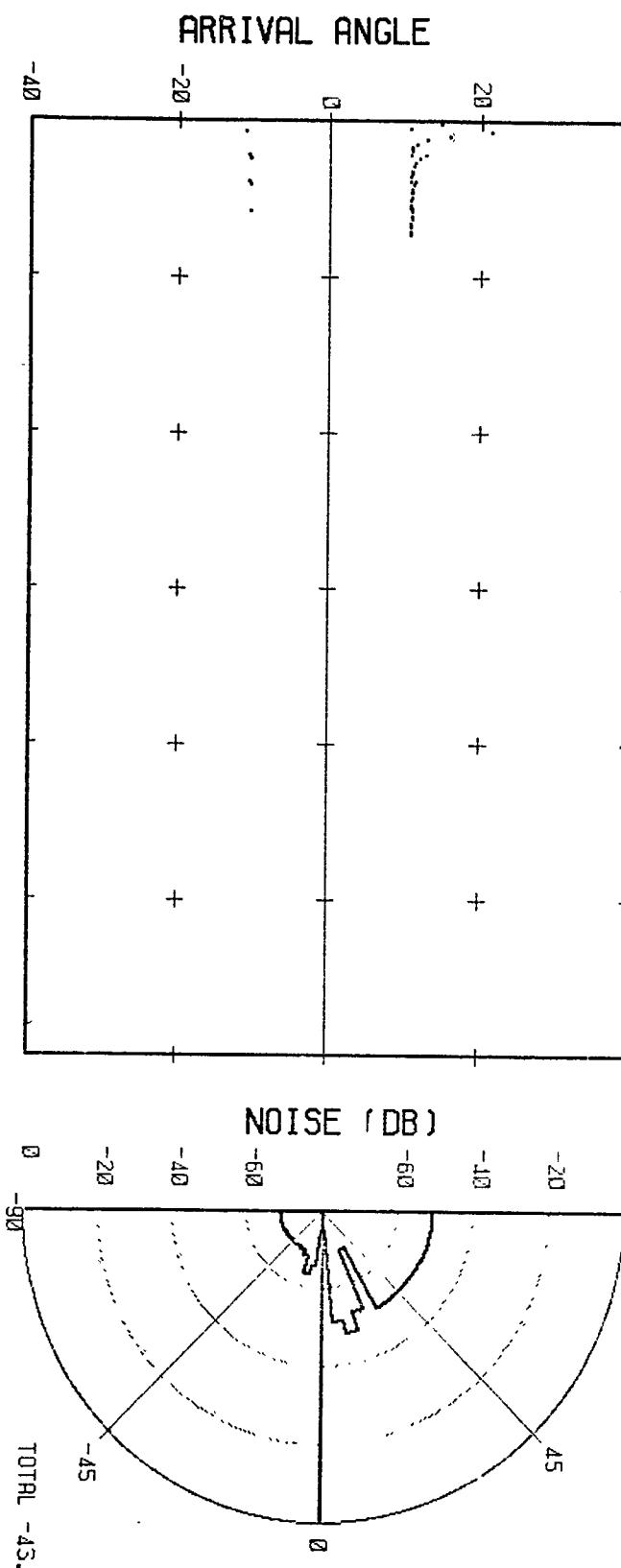
DB LOSS



DEPTH IN METERS



NOISE (dB)



TOTAL -43.8 dB

AREA 3A SUMMER

S 50 R 100 F 900

1450 M/S 1500 1550

LRAPP

70

DB LOSS

90

+

+

+

+

+

+

110

+

+

+

+

+

130

0

90

6000

4000

2000

DEPTH IN METERS



ARRIVAL ANGLE

40

+

+

+

+

+

20

0

-20

-40

-40

-60

-60

-80

-100

-150

-200

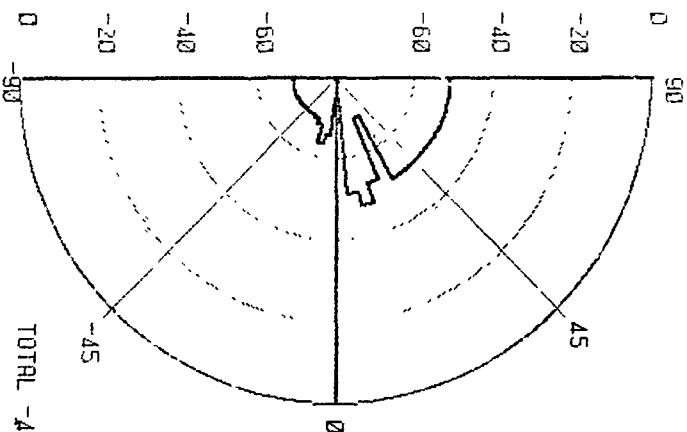
-250

-300

RANGE

(KIOS)

NOISE (DB)



TOTAL -43.8 DB

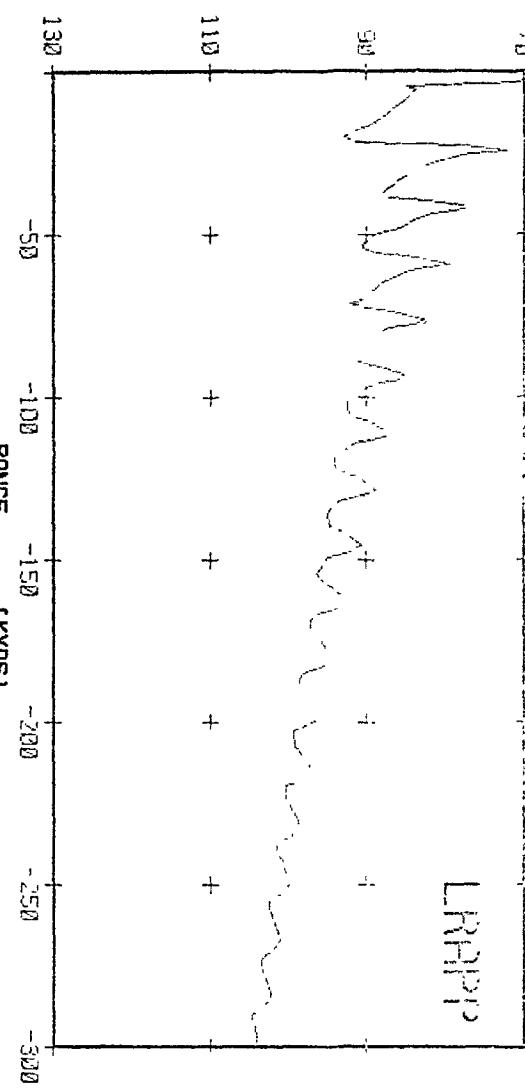
70

AREA 3A SUMMER

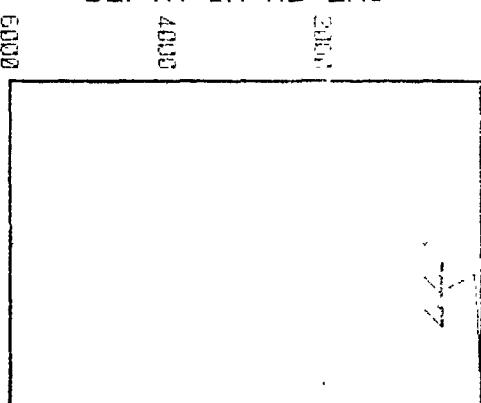
S 233 N 104.9 F 90.0

1450 M/S 1500 1550
-777LRRP²⁰⁰

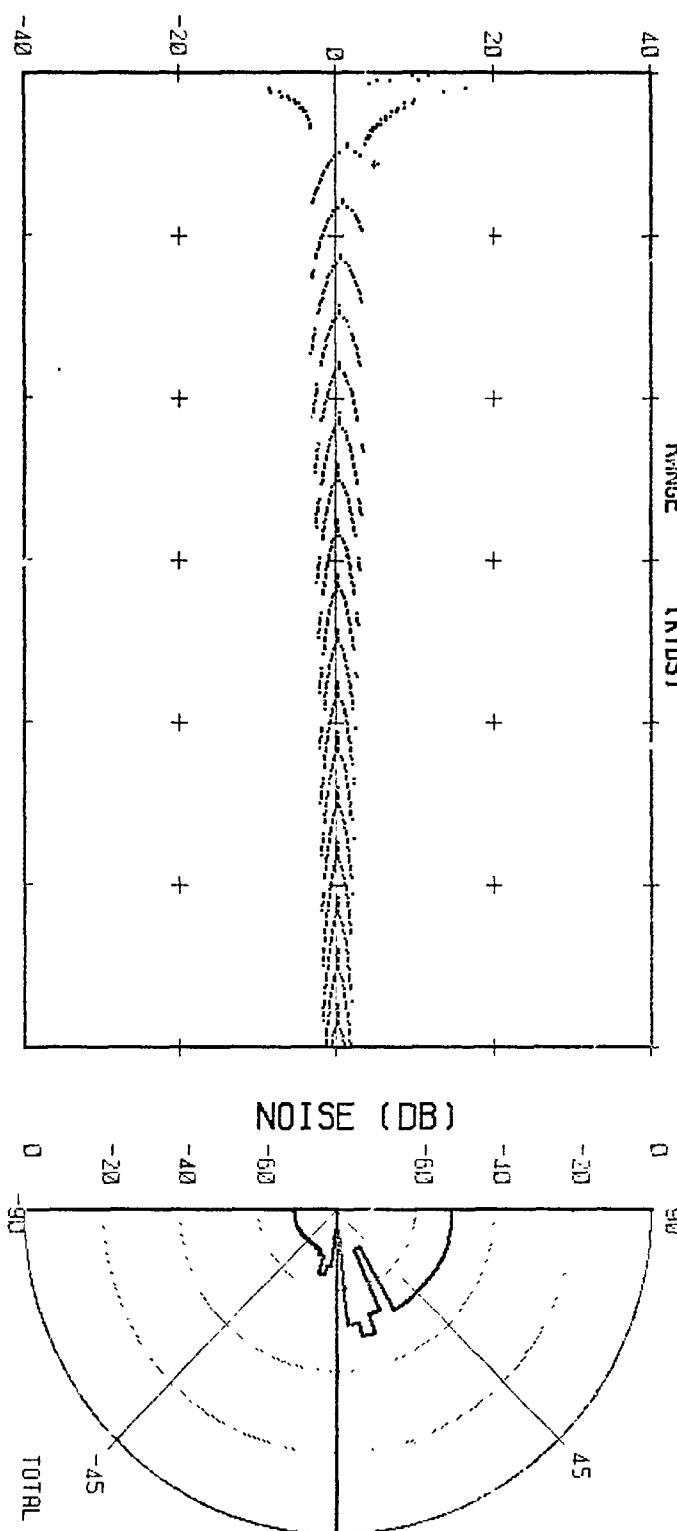
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -43.8 dB

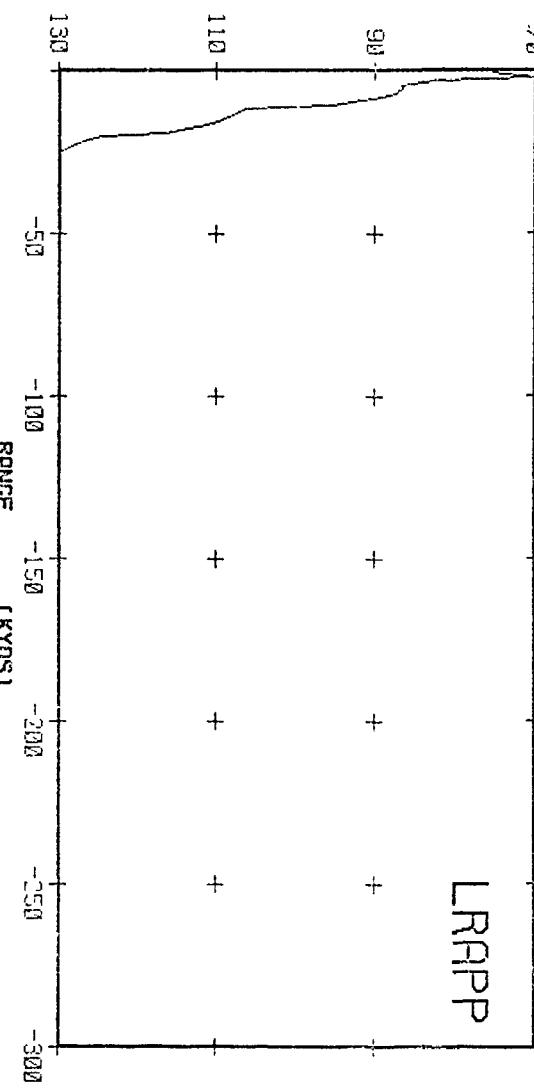
AREA 3A SUMMER

S 20 R 1500 F 900

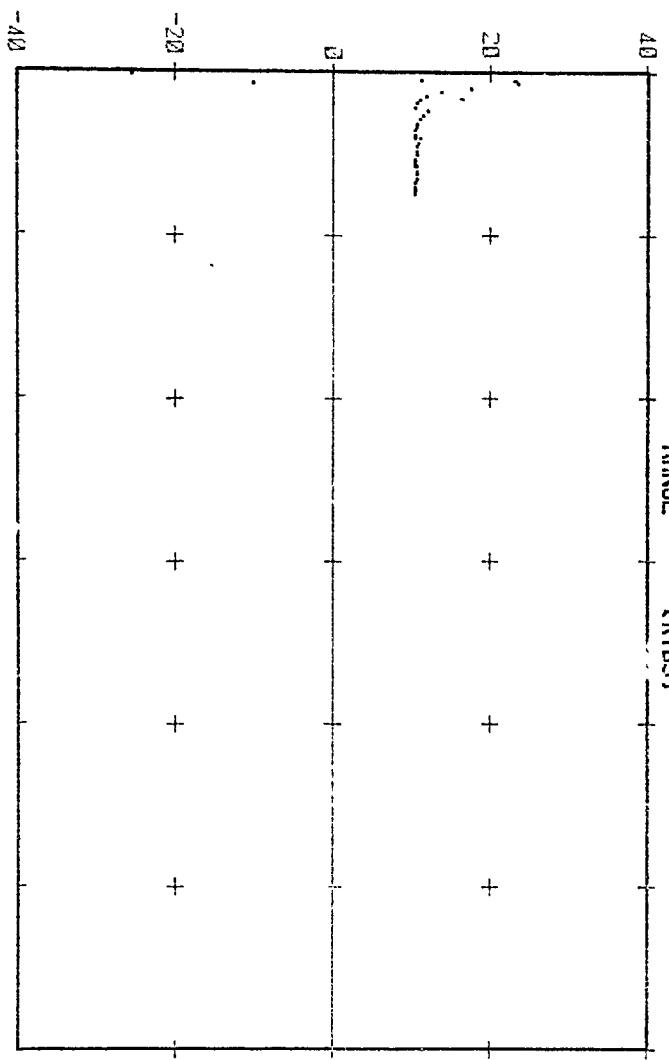
1450 M.S. 1500 1550

LRRAPP

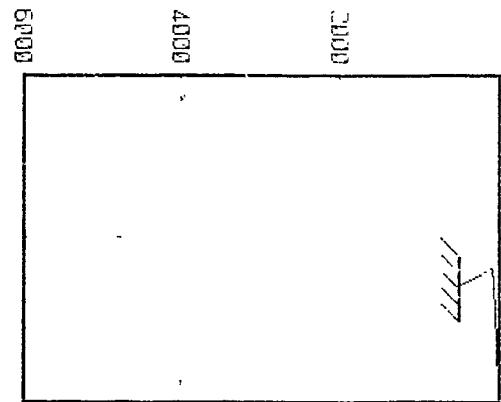
DB LOSS



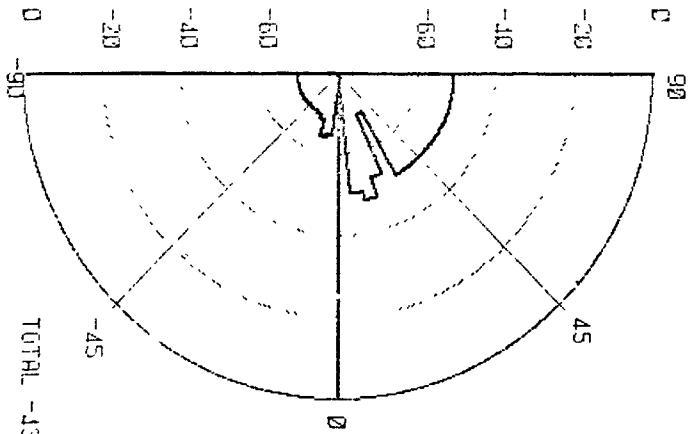
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -13.8 dB

10

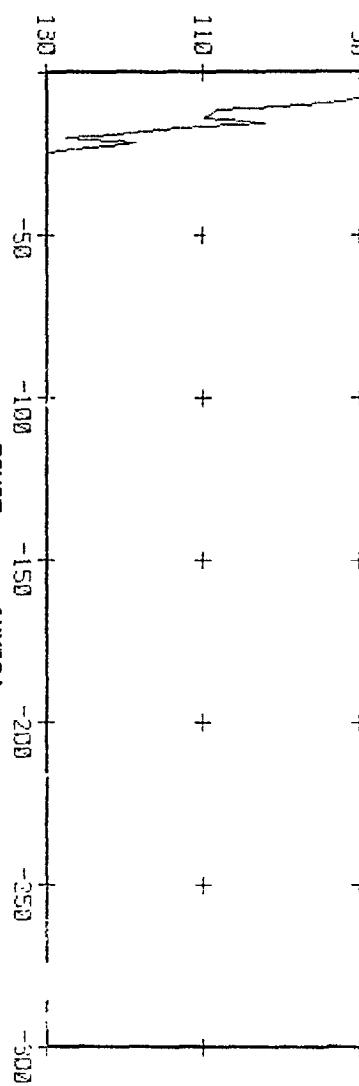
AREA 3A SUMMER

S 59 R 150 F 900

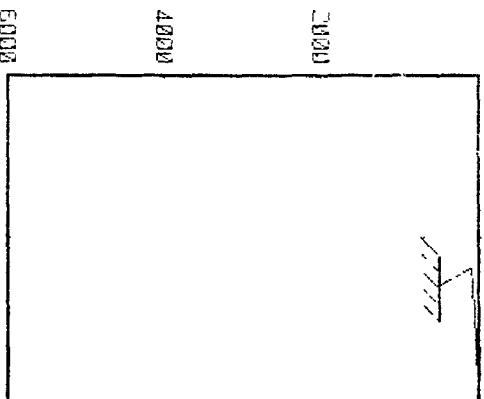
1450 M/S 1500 1550

LRAAPP

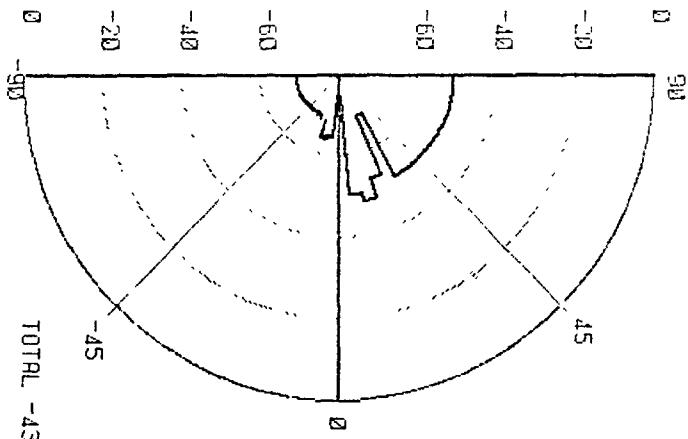
DB LOSS



DEPTH IN METERS



NOISE (DB)

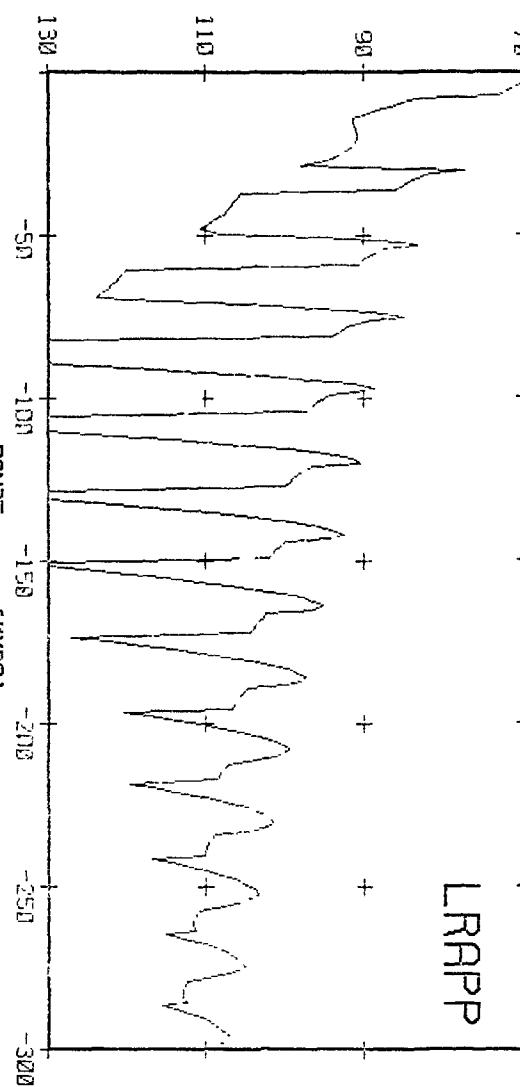


AREA 3A SURFER

S 233 R 150 F 900

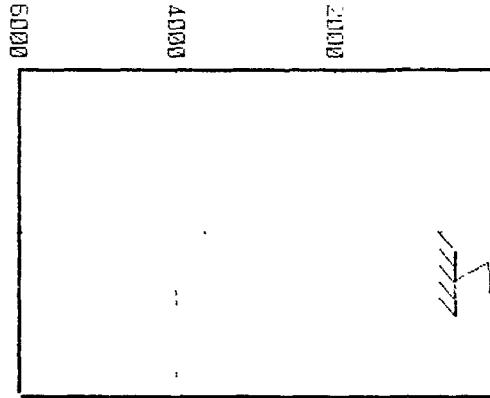
1450 M/S 1500 1550

DB LOSS

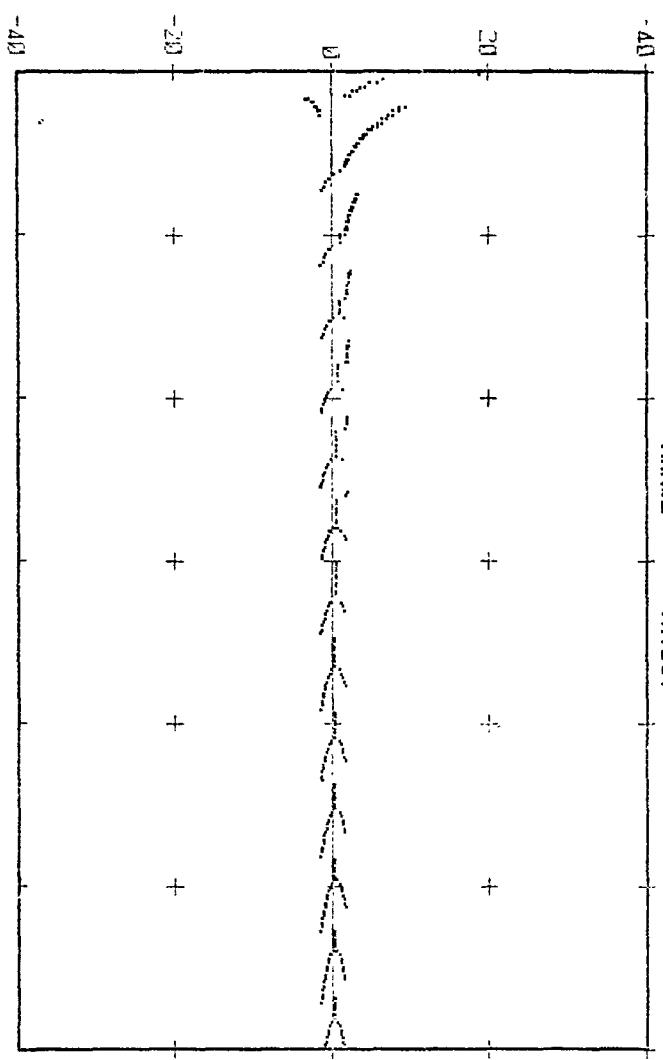


LRAAPP

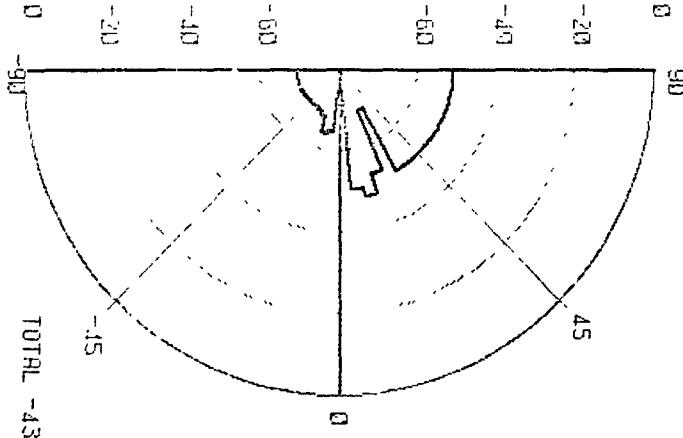
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



TOTAL -43.3 DS

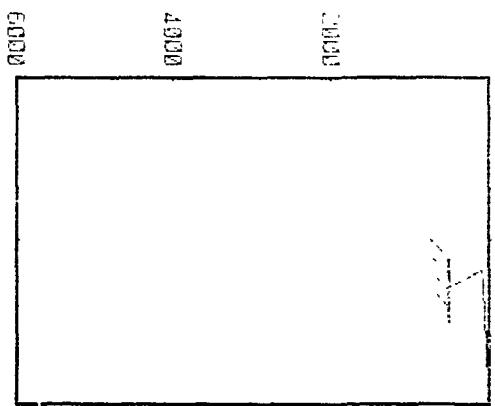
1450 M.S. 1504 1554

LRRPP

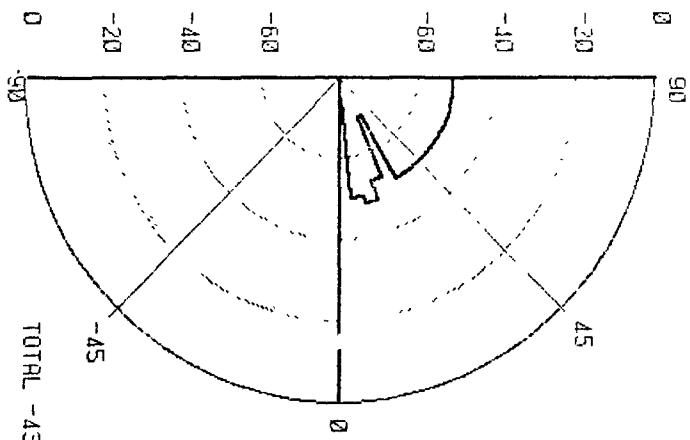
DB LOSS



DEPTH IN METERS



NOISE (DB)



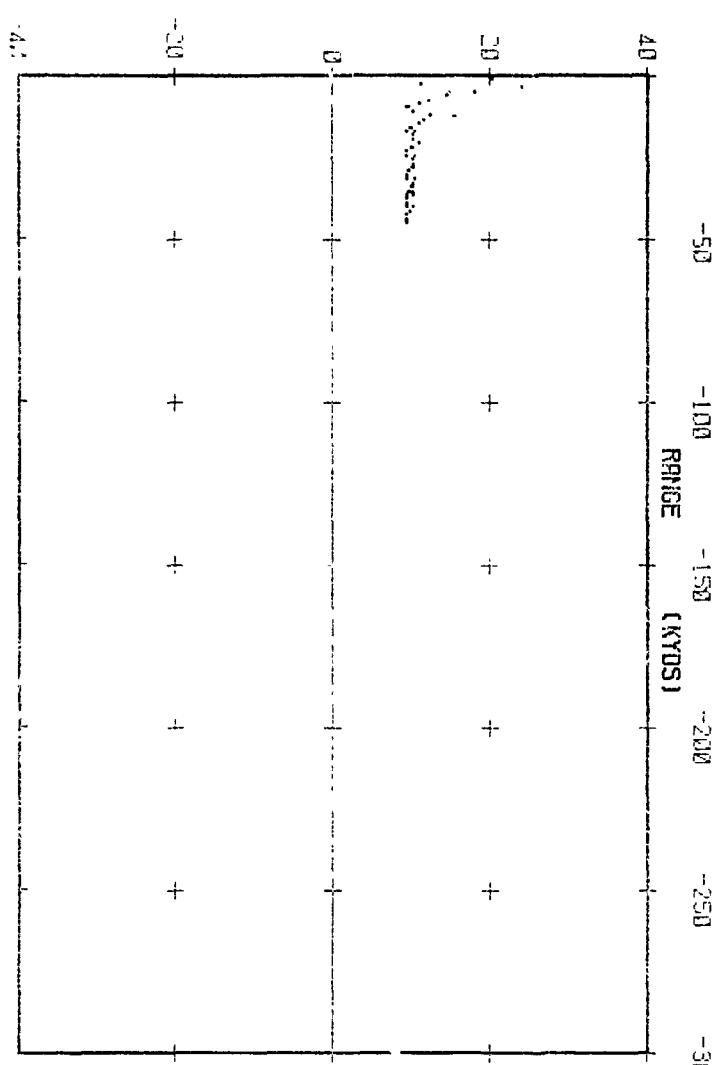
AREA 3A SUMMER

S 50 R 164 F 900

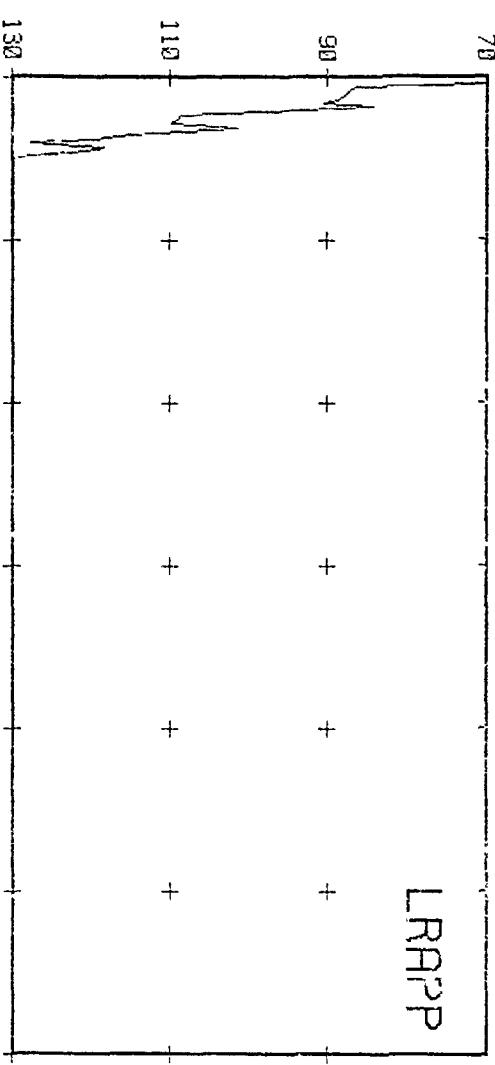
1450 M/S 1500 1550



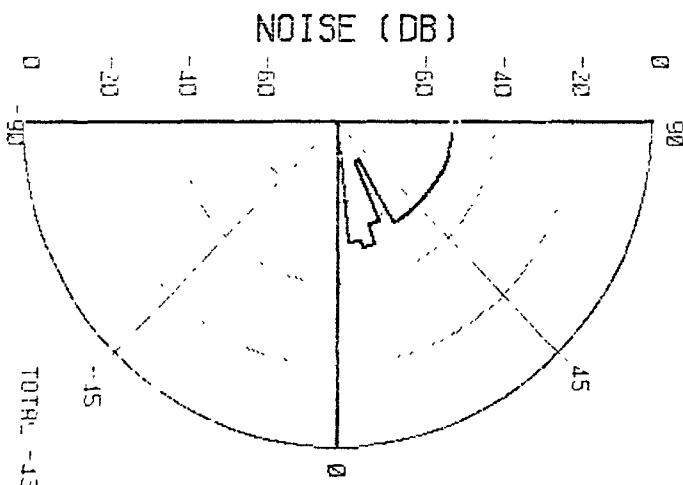
ARRIVAL ANGLE



DB LOSS



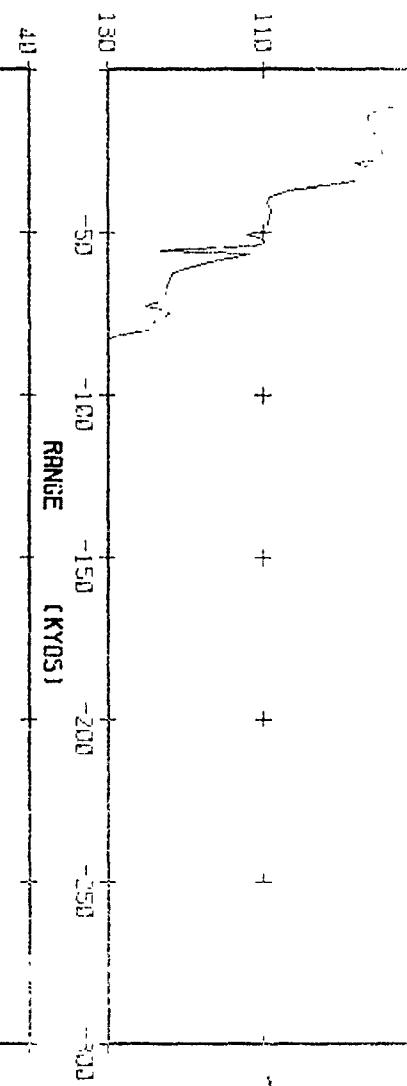
DEPTH IN METERS



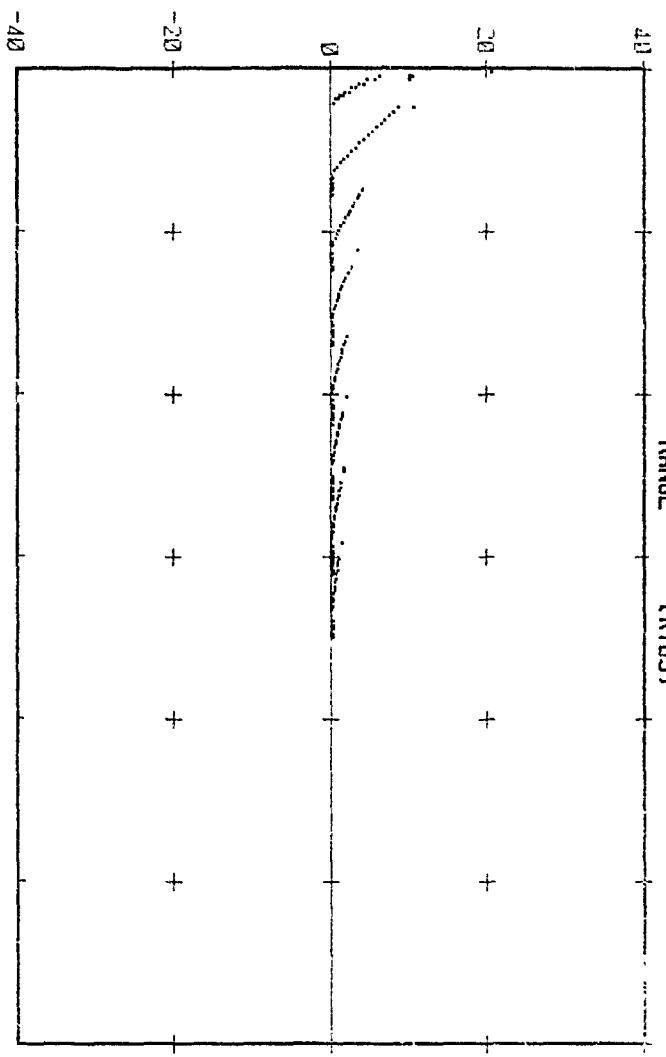
TOTL - 43.9 DB

1450 M/S 1500 1550
LWHP

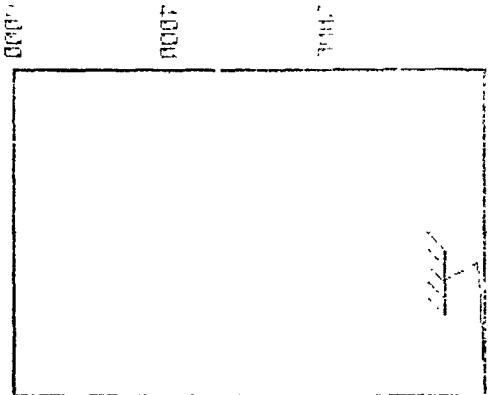
DB LOSS



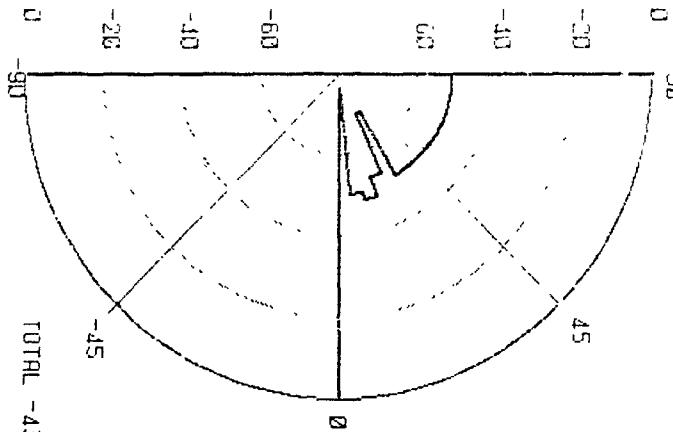
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



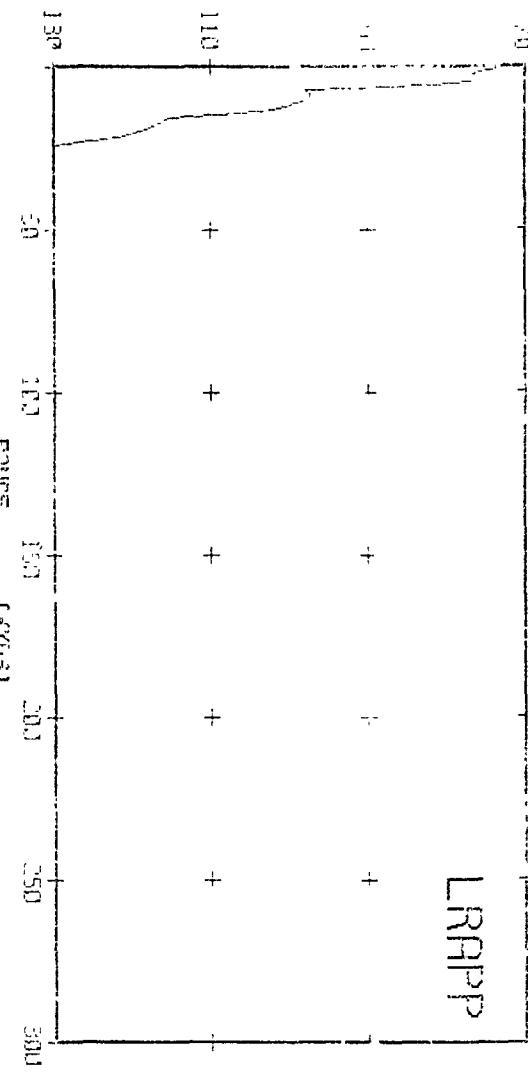
RICKEN 3A SUMMER

S 20 R 63 F 1268

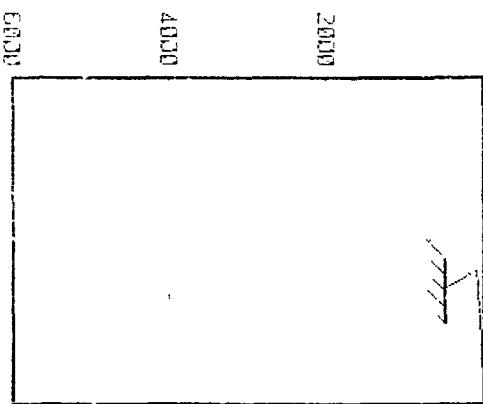
1450 WS 1500 1550

LRRPP

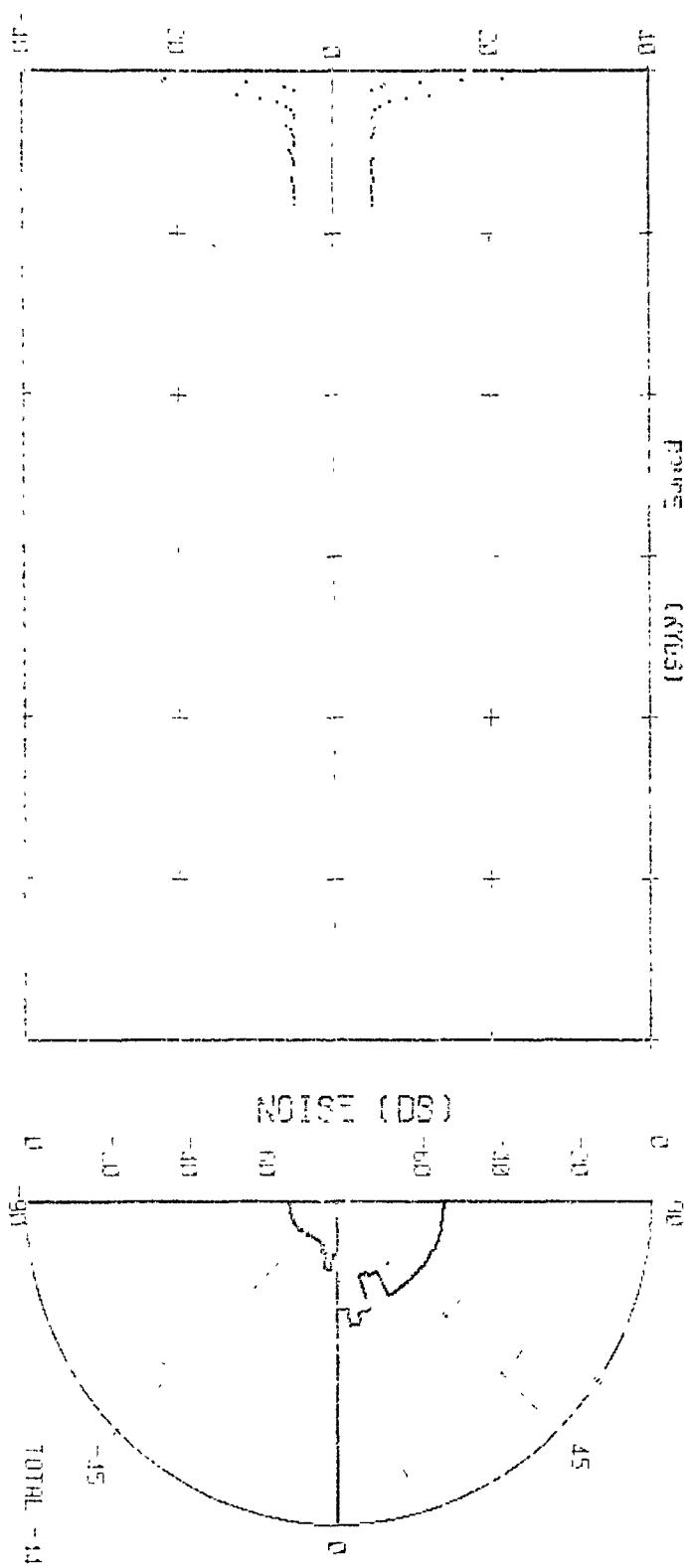
DB LOSS



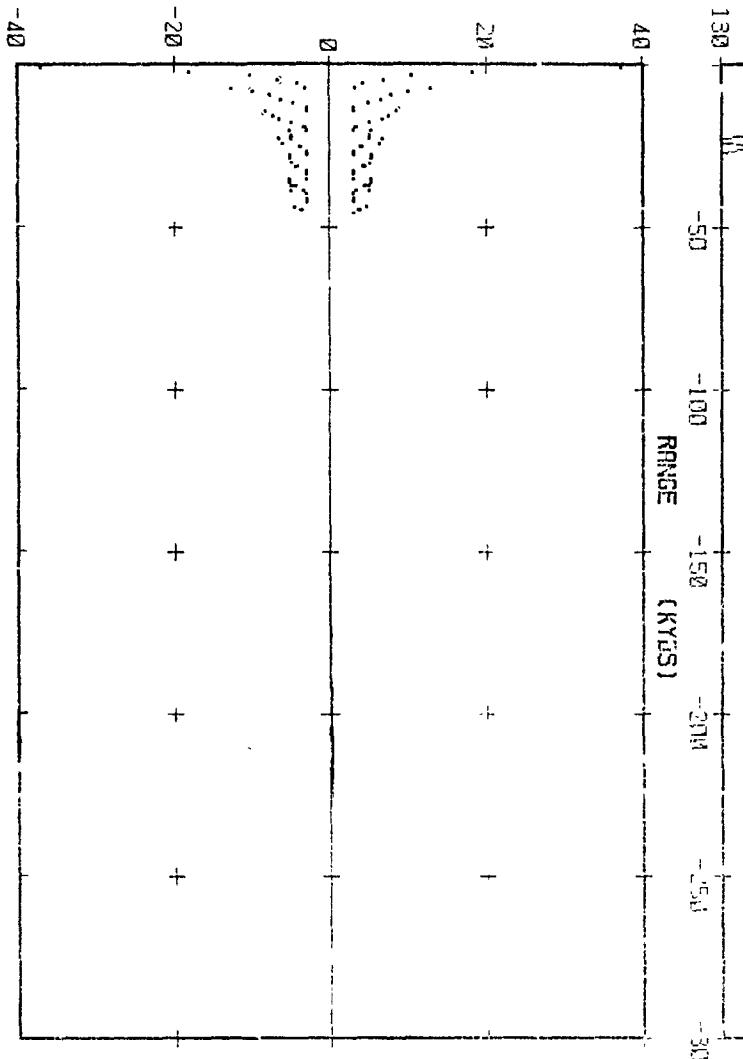
DEPTH IN METERS



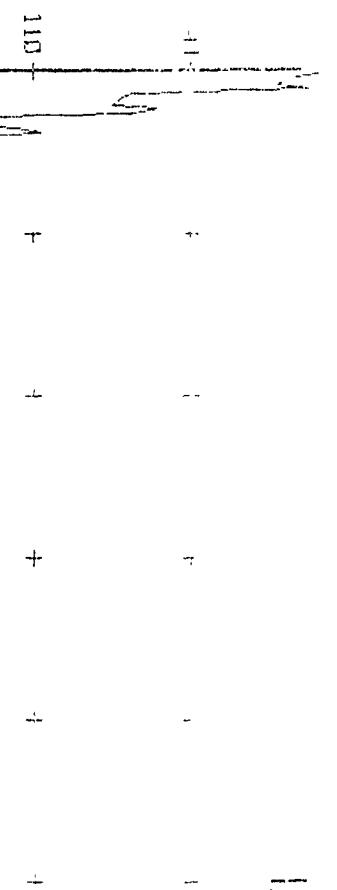
NOISE (DB)



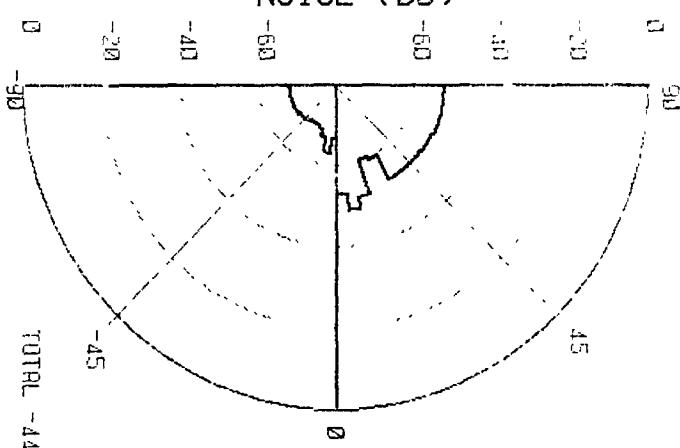
ARRIVAL ANGLE



DB LOSS



NOISE (DB)



REF ID: A41001

110
120

Lat 41.1 N Long 135.0 E
110 120

TOTAL -44.9 dB

FRE 3A SUMMER

S 233 R 62 F 1265

1450 1455 1500 1550

LRAFP

DB LOSS

90 + + + + + + +

130
110
90
40

2000
4000

6000

DEPTH IN METERS

ARRIVAL ANGLE

+ + + + + + +

RANGE (KMS)

NOISE (DB)

40
30
20
10
0

60
50
40
30
20
10
0

-150 -145 -140 -135 -130 -125 -120 -115 -110 -105 -100 -95 -90 -85 -80 -75 -70 -65 -60 -55 -50 -45 -40 -35 -30 -25 -20 -15 -10 -5 -100 -95 -90 -85 -80 -75 -70 -65 -60 -55 -50 -45 -40 -35 -30 -25 -20 -15 -10 -5

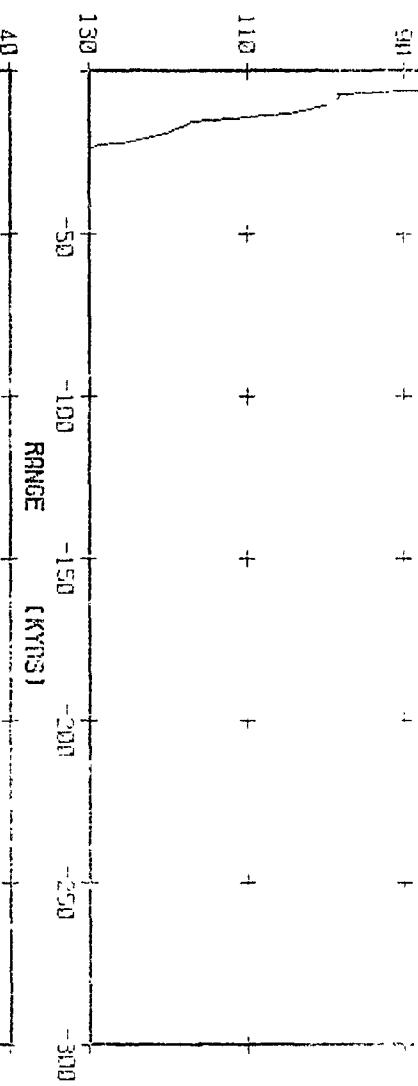
0 45 90 135 180 225 270 315 360

70 FWD 3rd Shd 20' 5 20 R 133 F 123 J
L/M/H

L/M/H

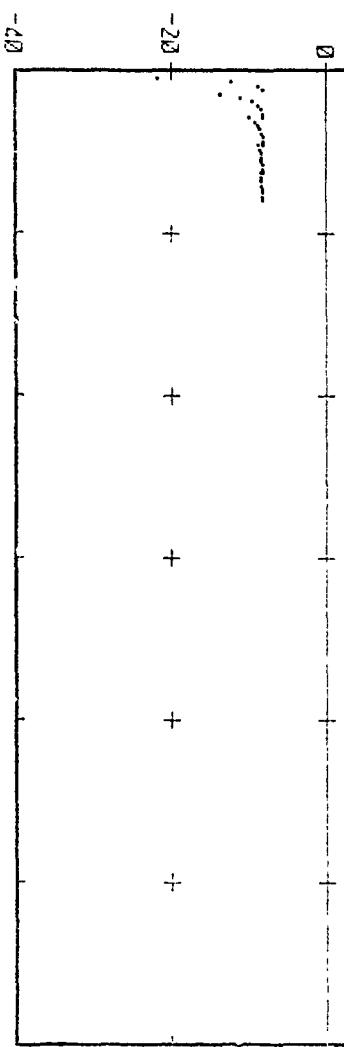
Latitude 40° 15.3N 153W 157W

DB LOSS

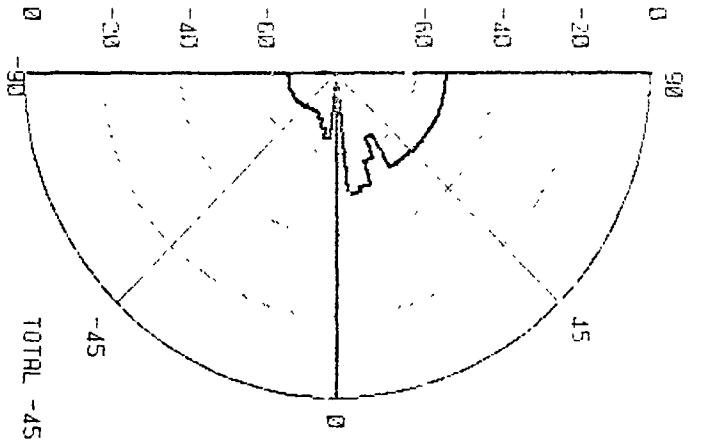


DEPTH IN METERS
5000
4000

ARRIVAL ANGLE



NOISE (DB)



AREA 3A SUMMER

S 50 R 133 F 1200

1450 M/S 1500 1550

L RAPP

DB LOSS

90 + + + + +

110 + + + + +

130 -50 -100 -150 -200 -250 -300

RANGE (KYDS)

DEPTH IN METERS

2000

4000

6000

8000

ARRIVAL ANGLE

4V

NOISE (DB)

0

-20

-40

-60

-80

-100

-120

-140

-160

-180

-200

-220

-240

-260

-280

-300

-320

-340

-360

-380

-400

-420

-440

-460

-480

-500

-520

-540

-560

-580

-600

-620

-640

-660

-680

-700

-720

-740

-760

-780

-800

-820

-840

-860

-880

-900

-920

-940

-960

-980

-1000

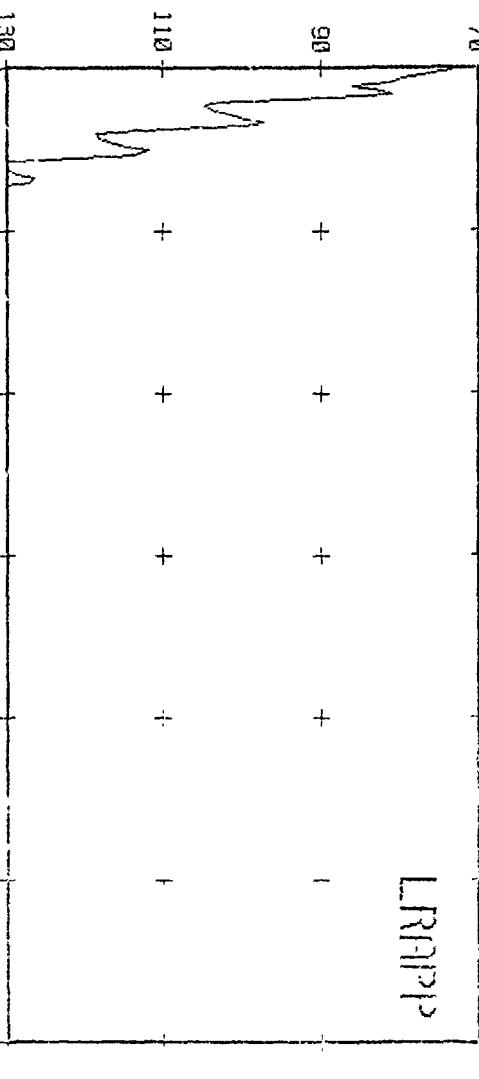
AREA 3A SUMMER

S 233 R 153 F 122E

1450 145 1500 1558

LFRIPP

DB LOSS



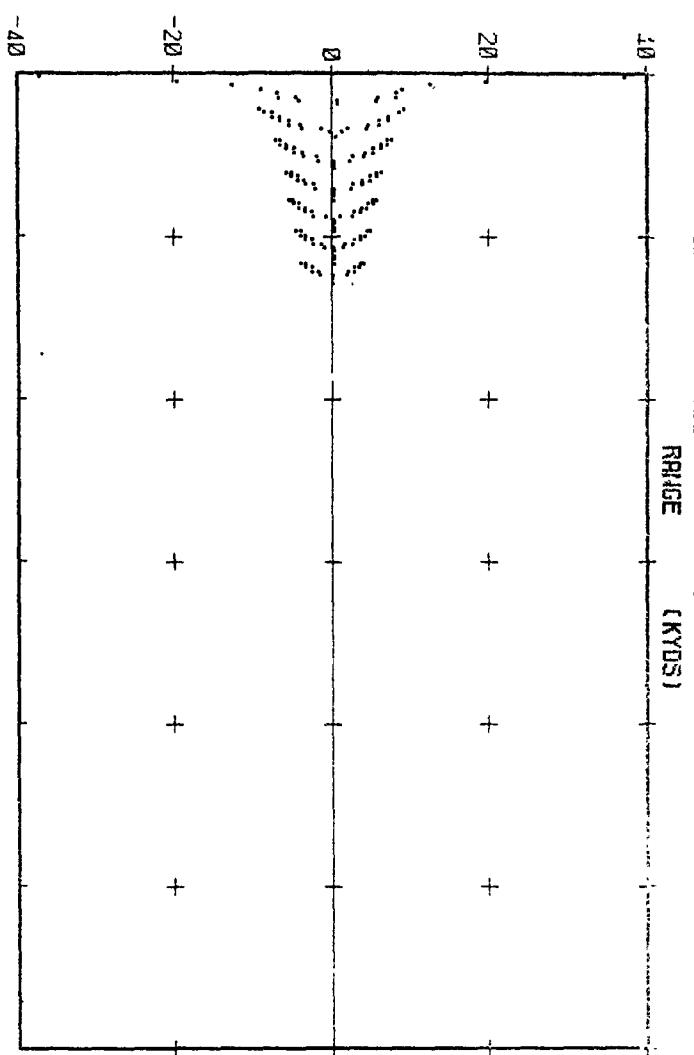
DEPTH IN METERS

2000

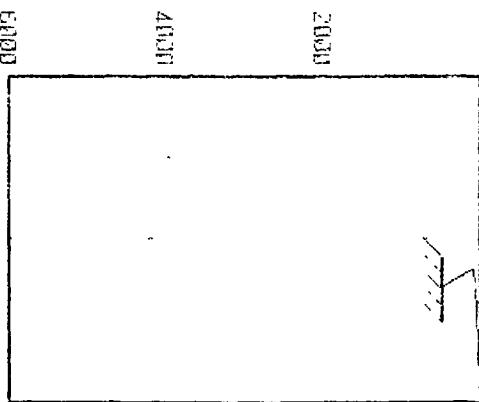
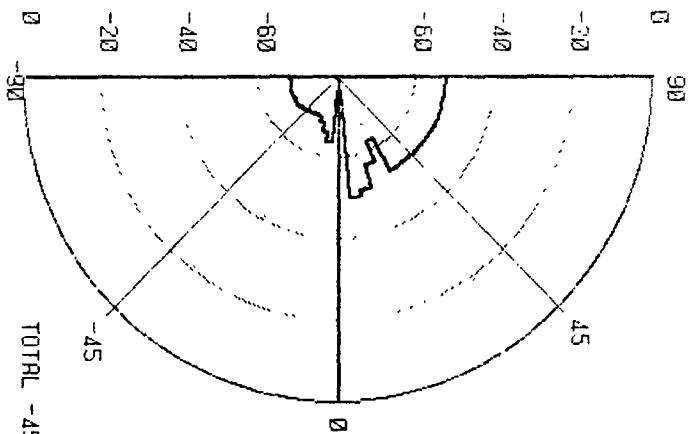
4000

6000

ARRIVAL ANGLE



NOISE (DB)



1450 145 1500 1558

1558

70

RIVER 3A SUMMER

S 20 R 282 F 1200

1450 M/S

1500

1550

LRAPP

DB LOSS

90

+

+

+

+

+

+

130
110
90
70
50
30
10
-50 -100 -150 -200 -250 -300

DEPTH IN METERS

2000
4000
6000

40

+

+

+

+

+

+

0

-

-

-

-

-

NOISE (DB)

0

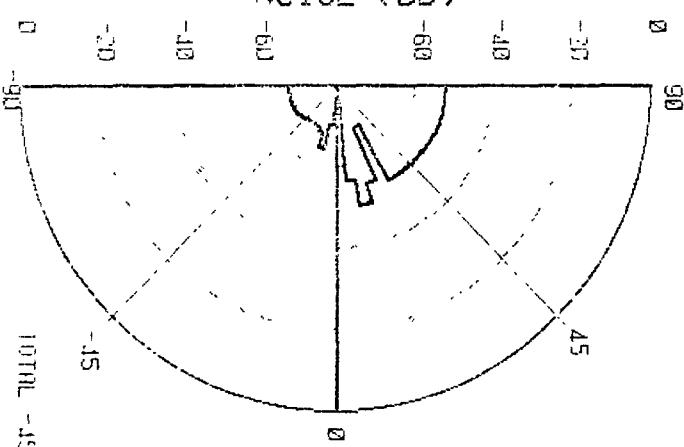
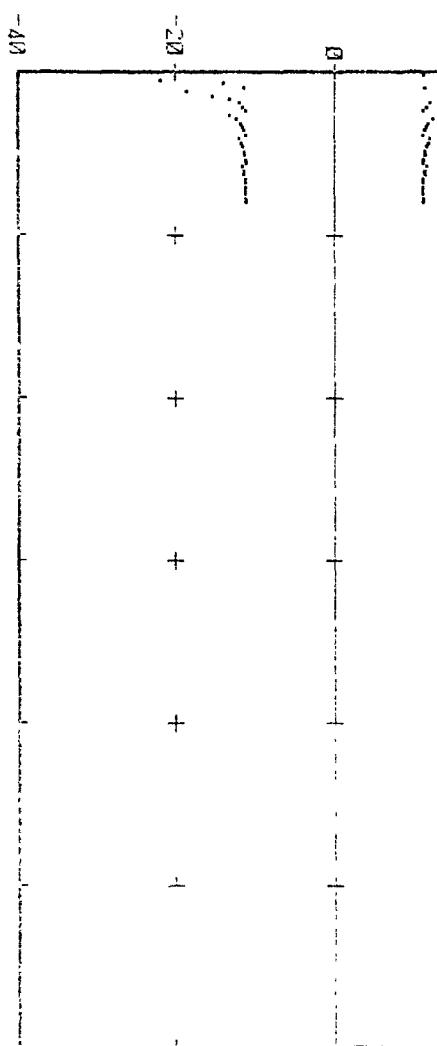
-30

-45

-60

-80

-



RIVER 39 SOUTHERN

S. 58 R 282 T 12 E

1450 1475 1500 1525

LRRP

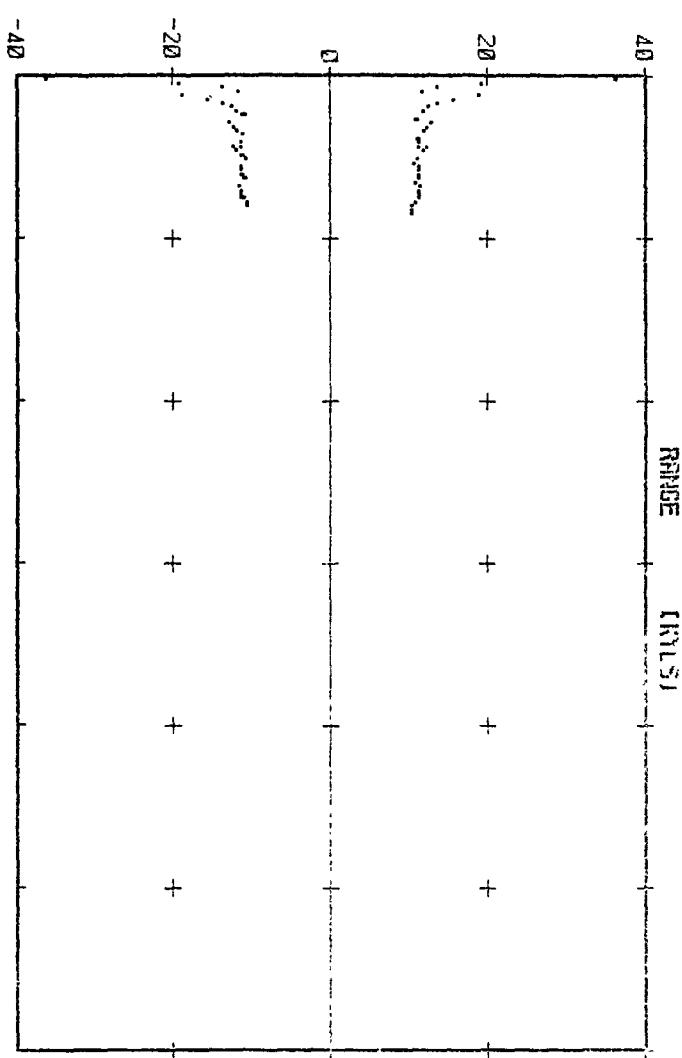
DB LOSS



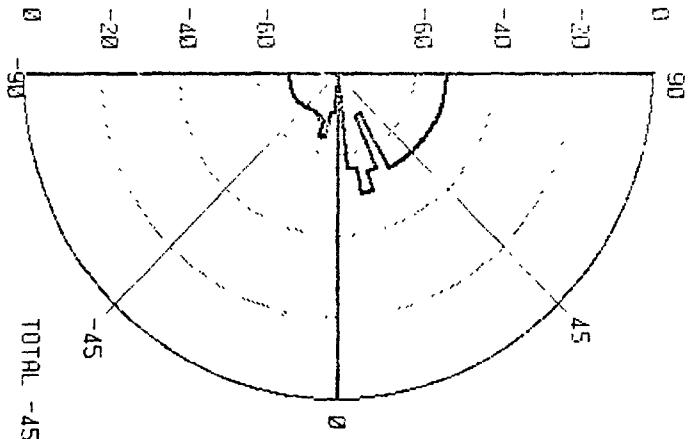
DEPTH IN METERS

0 100 200 300 400

ARRIVAL ANGLE



NOISE (DB)



TOTAL -45.7 DB

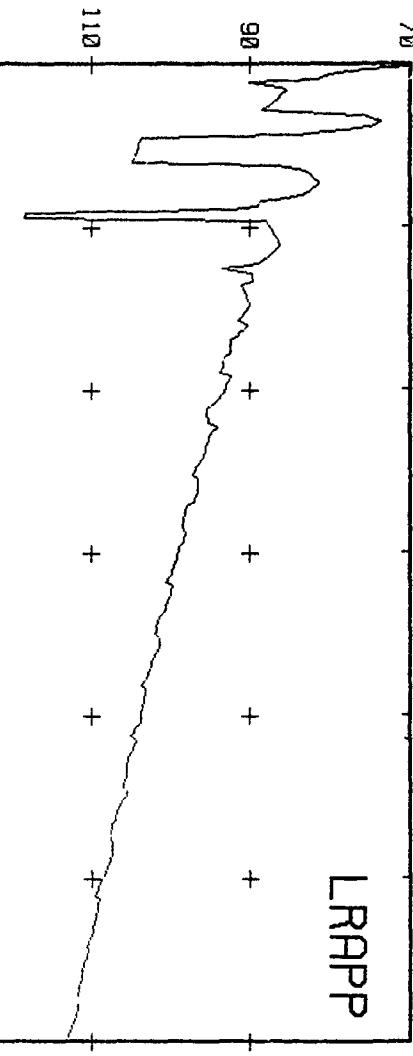
AREA 3A SUMMER

S 233 R 262 F 1280

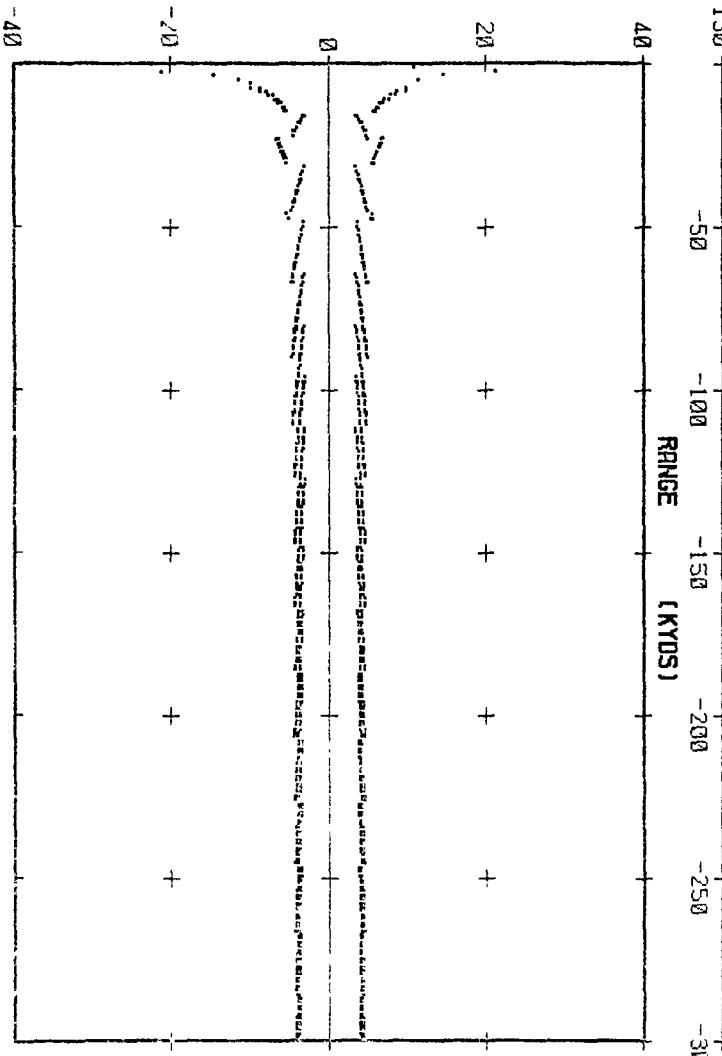
1450 M/S 1500 1550

LRAPP

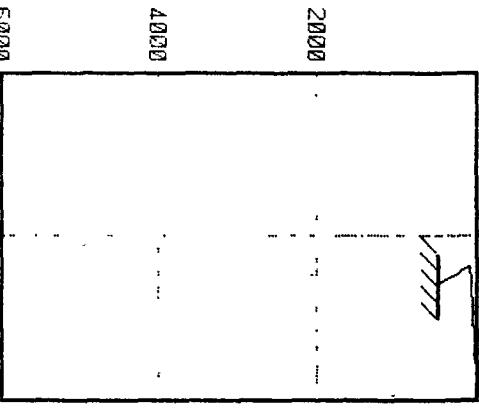
DB LOSS



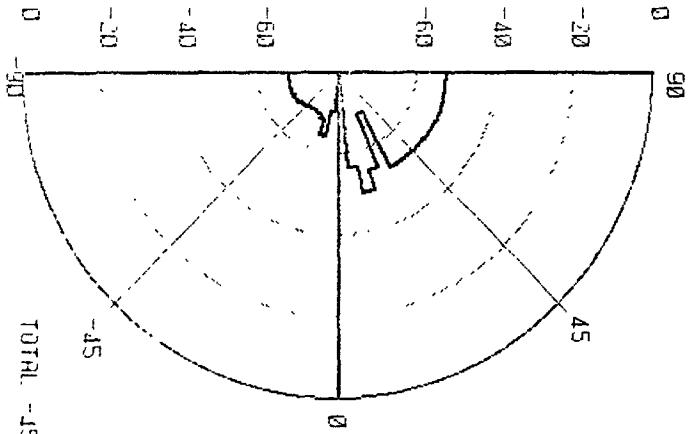
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

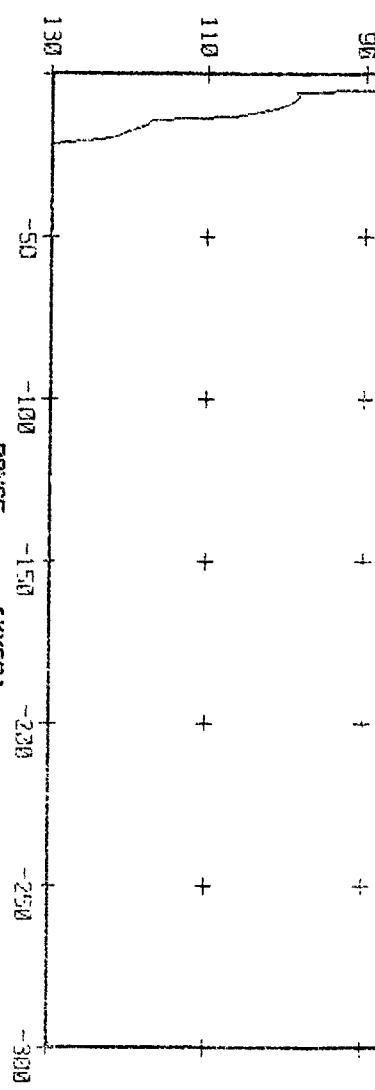
AREA 3A SUMMER

S 20 R 300 F 1200

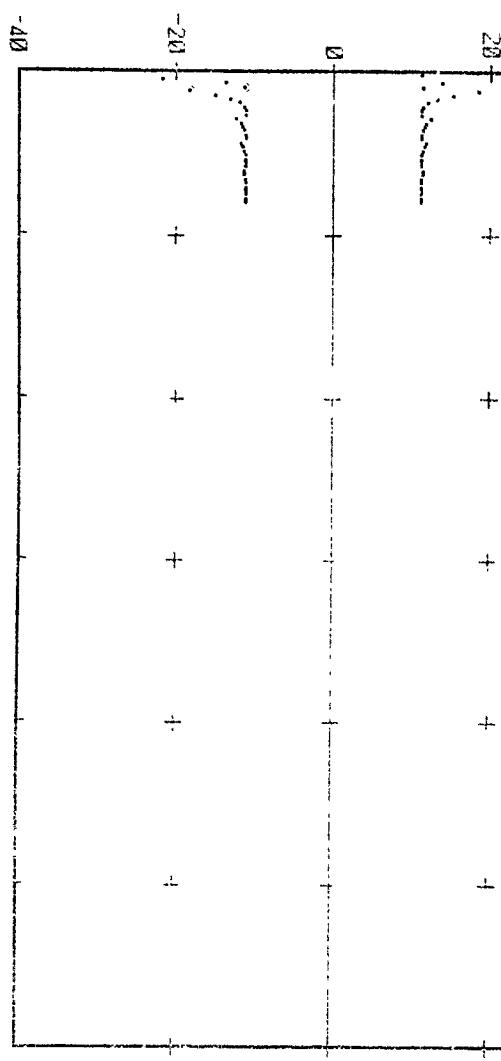
1450 .4/V3 1500 1550

LRAPP

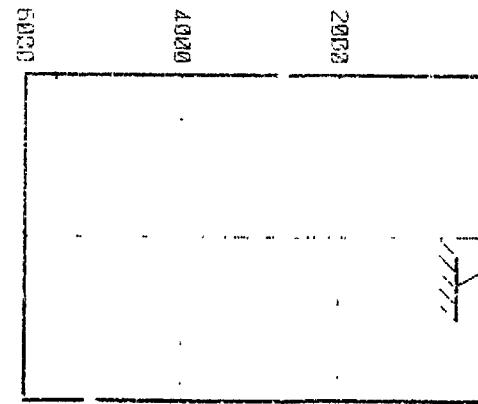
DB LOSS



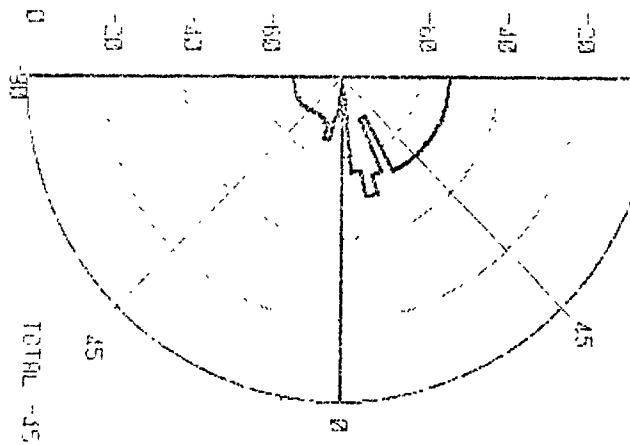
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (dB)



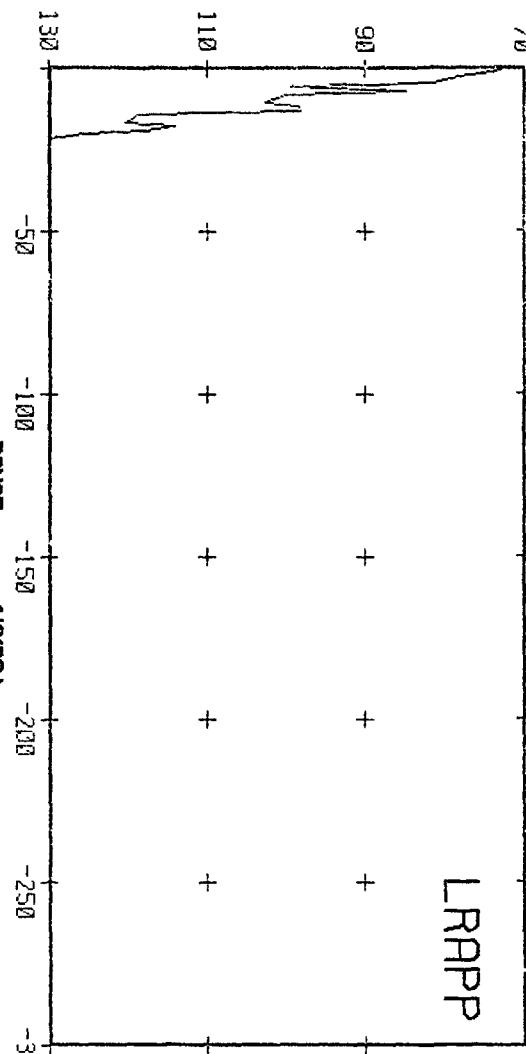
AREA 30 SUMMER

S 59 R 300 F 1200

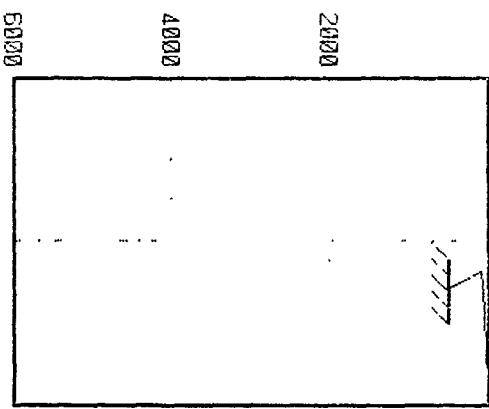
1450 M/S 1500 1550

LRAFP

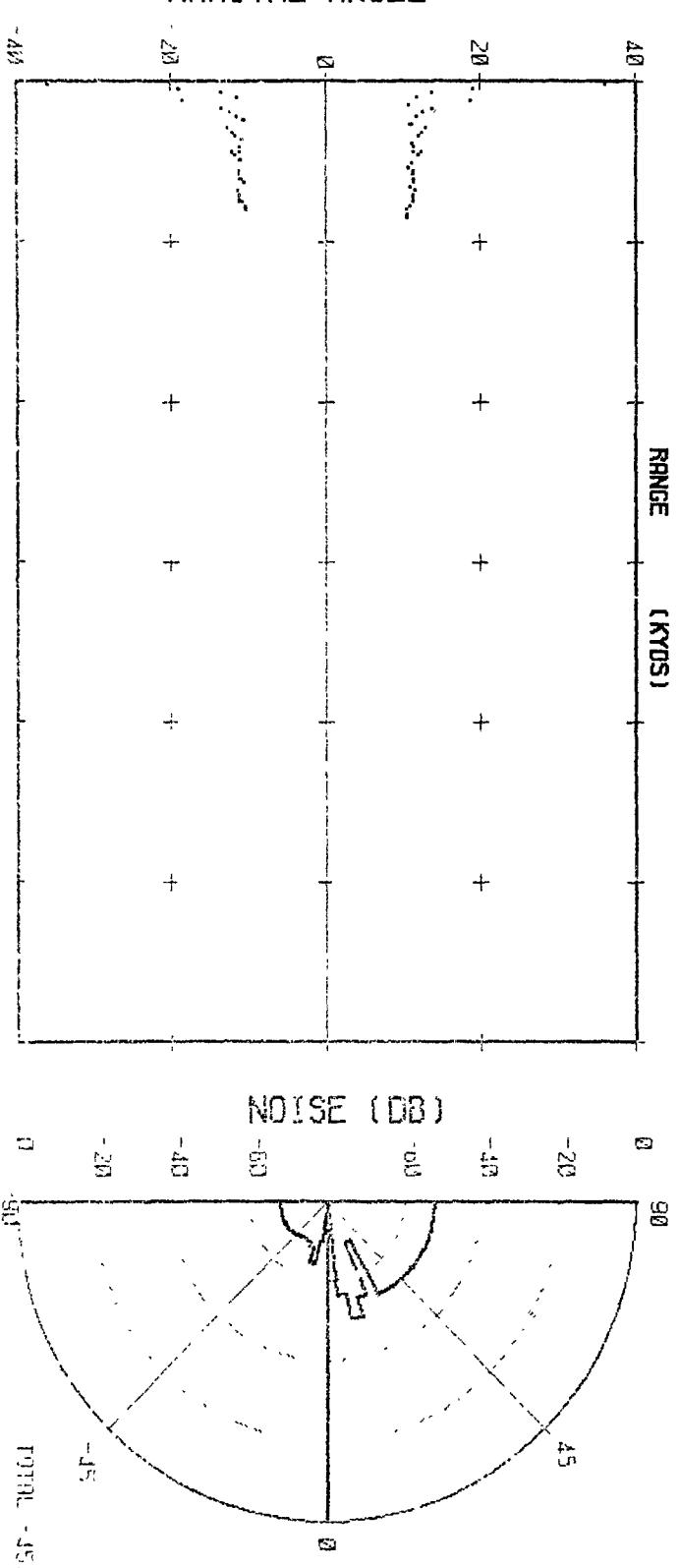
DB LOSS



DEPTH IN METERS



NOISE (DB)



78

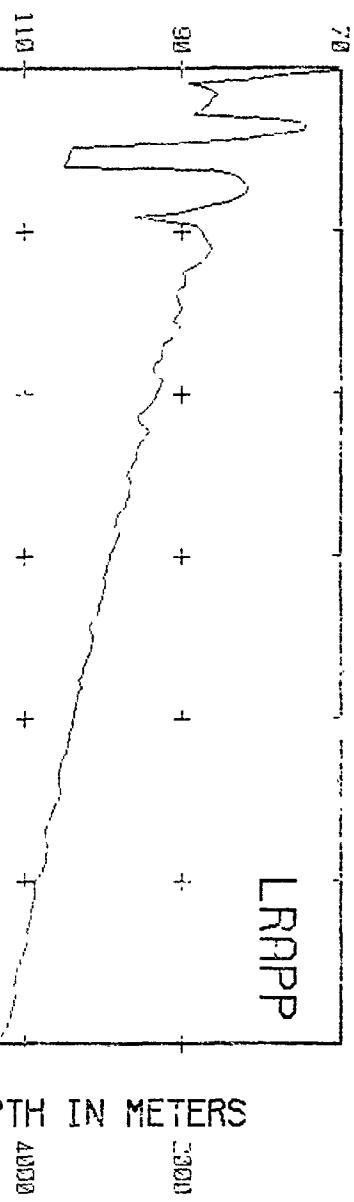
FIREN 30 SEC/SEC

S 233 R 360 F 1200

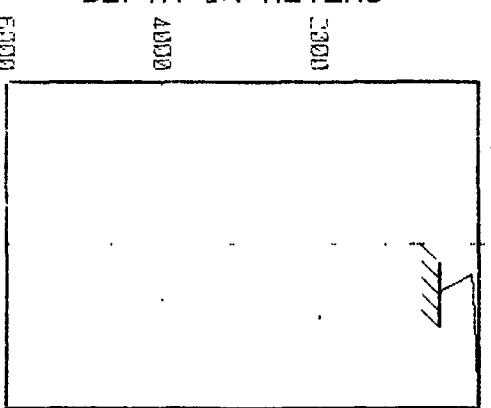
LRAPP

1450 M/S 1500 1550

DB LOSS

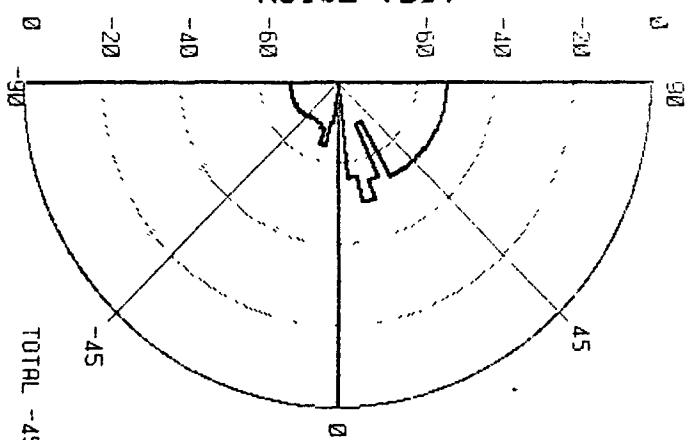
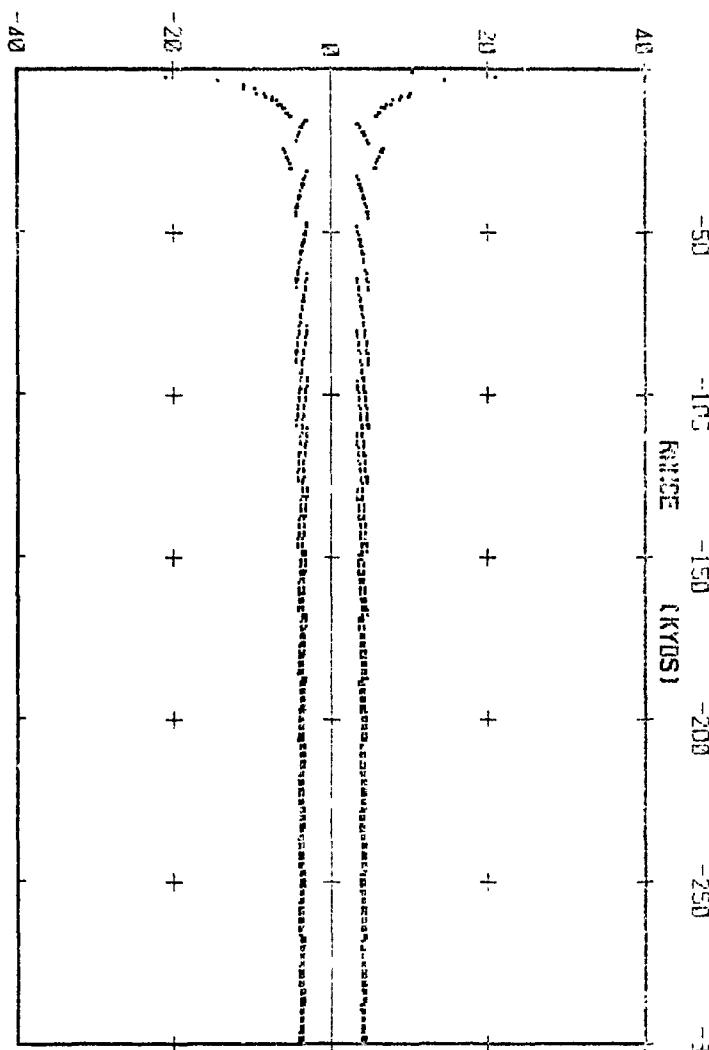


DEPTH IN METERS



NOISE (dB)

ARRIVAL ANGLE



TOTAL -45.7 DB

70

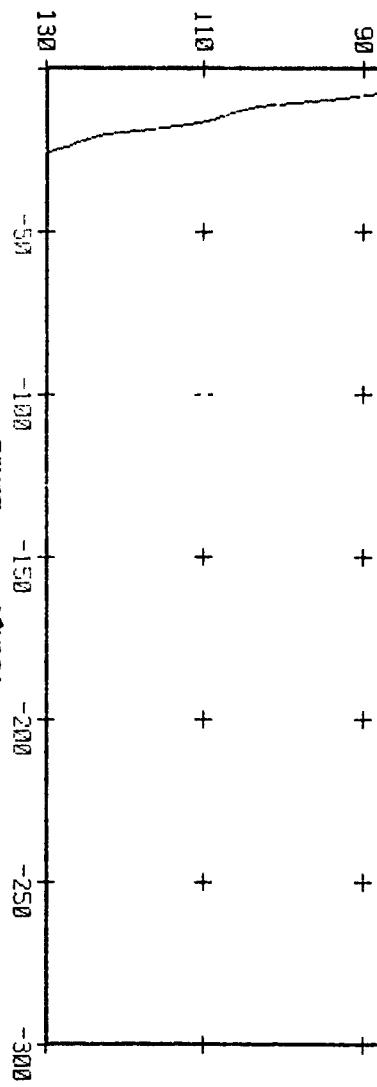
AREA 3A SUMMER

S 20 R 1000 F 1200

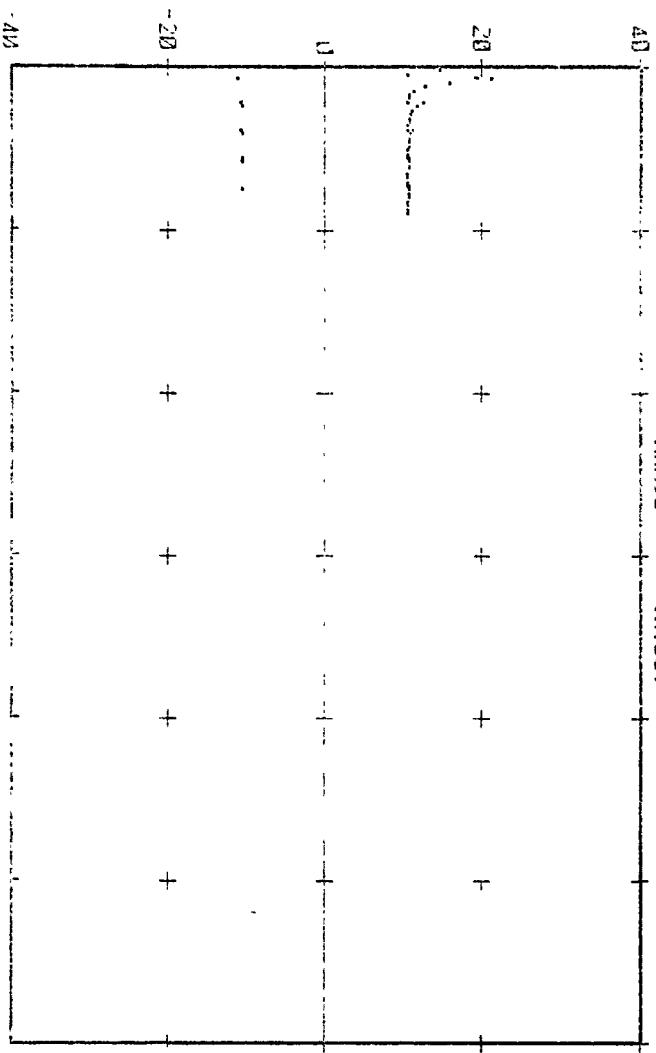
1450 M/S 1500 1550

LRAPP

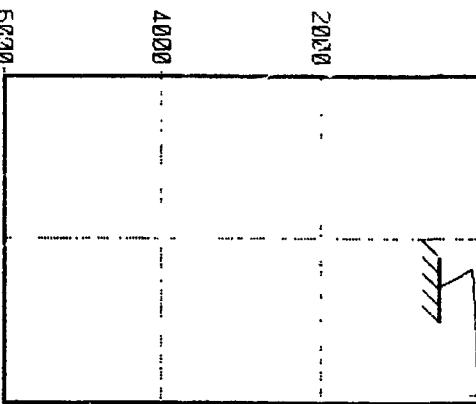
DB LOSS



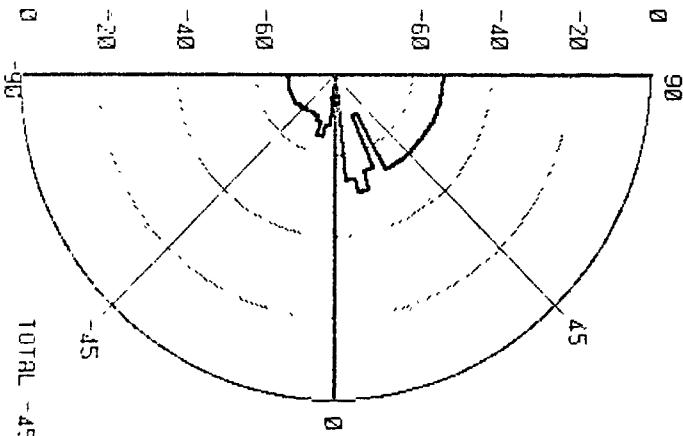
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -45. -16

70

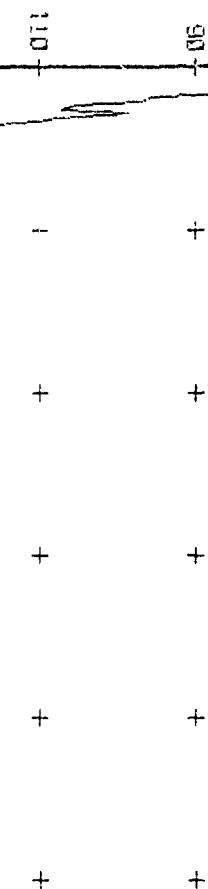
AREA 3A SUMMER

S 50 R 1000 F 1200

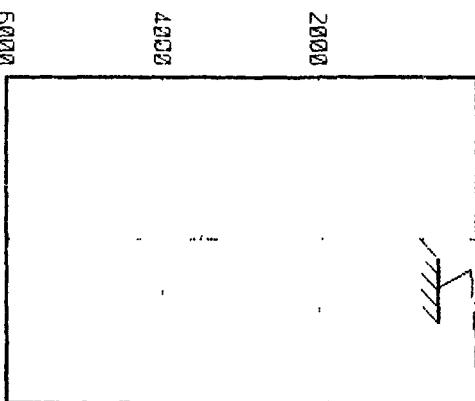
1450 M/S 1500 1550

LRAPP

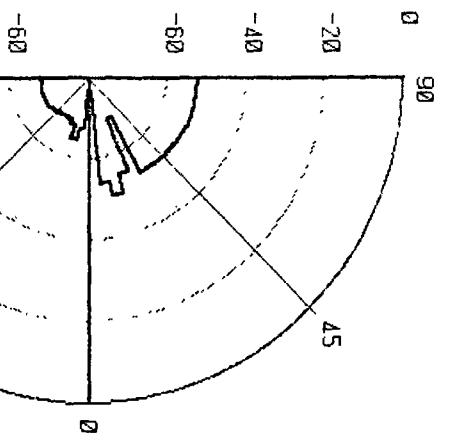
DB LOSS



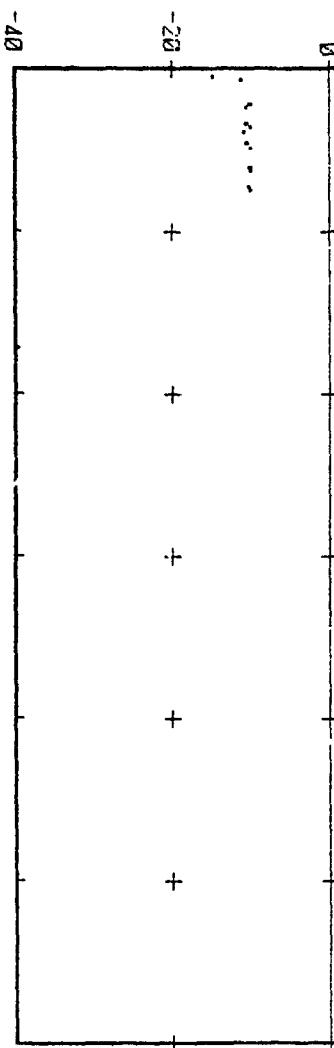
DEPTH IN METERS

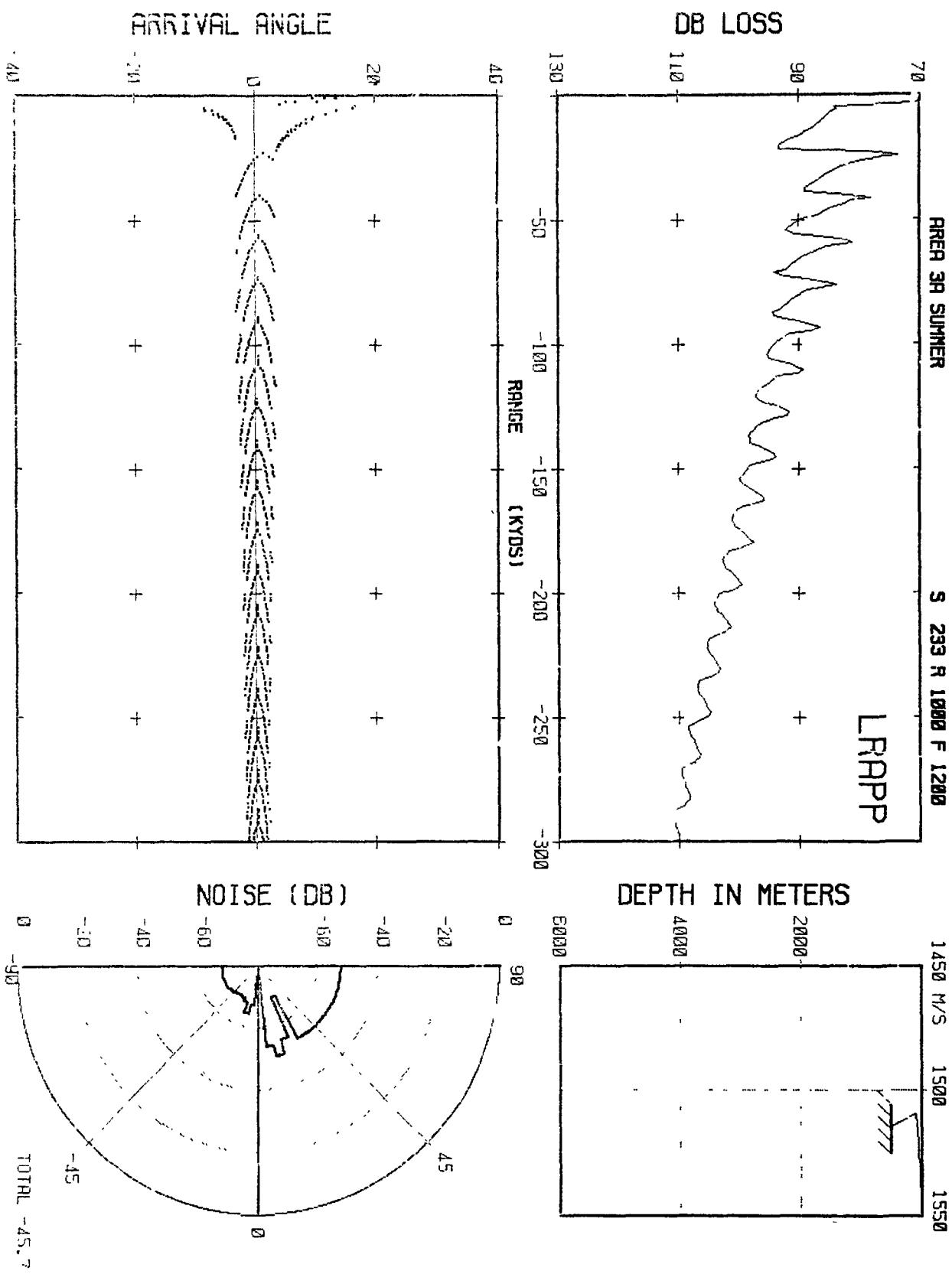


NOISE (DB)



ARRIVAL ANGLE





1450 11/3 1500 1550
S 26 N 154 W 1200

LRHPP

DB LOSS

130
110
40
-50 -100 -150 -200 -250 -300

RANGE (KMS)

DEPTH IN METERS

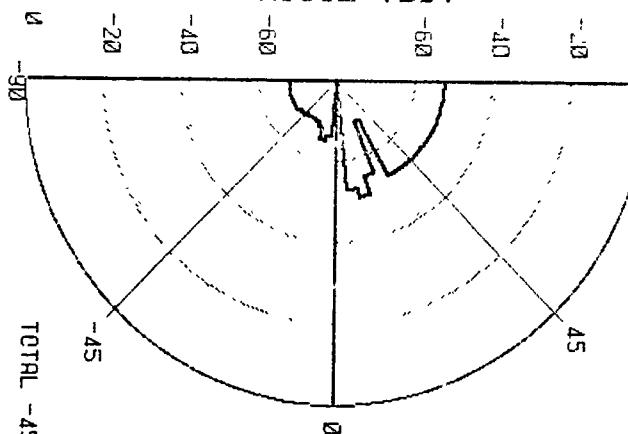
20000
40000

ARRIVAL ANGLE

20
0
-20
+ + + + + + + +

NOISE (DB)

-20
-40
-60
0
90



-163-

TOTAL -45.7 DB

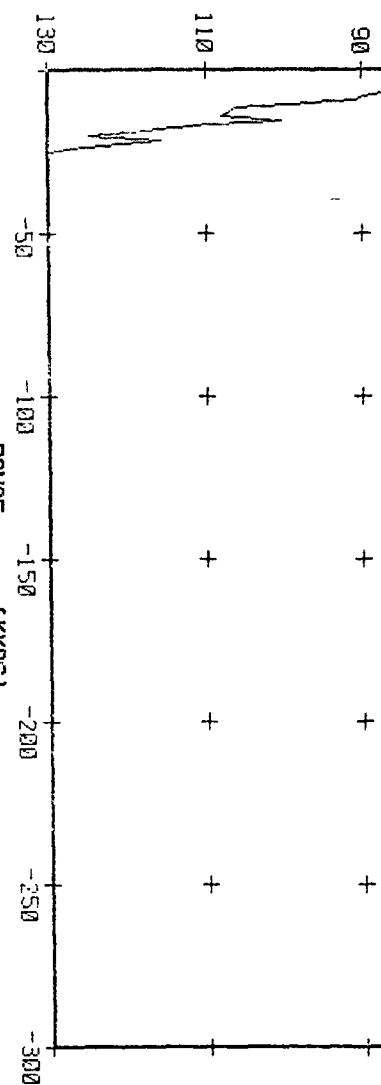
AREA 3A SUMMER

S 50 R 1500 F 1200

1450 M/S 1500 1550

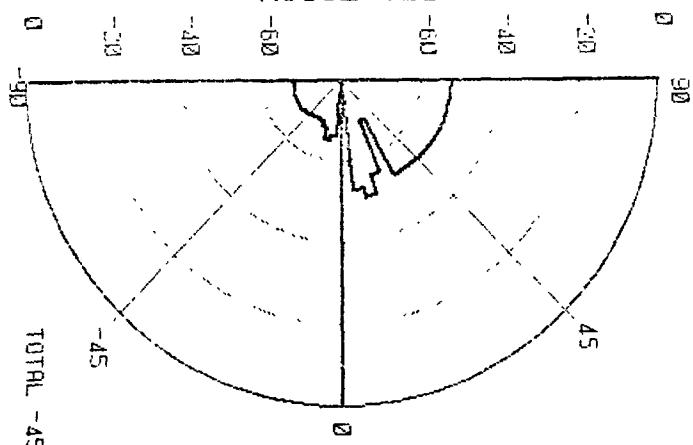
LRAAPP

DB LOSS



DEPTH IN METERS

NOISE (DB)



TOTAL -45.7 dB

70

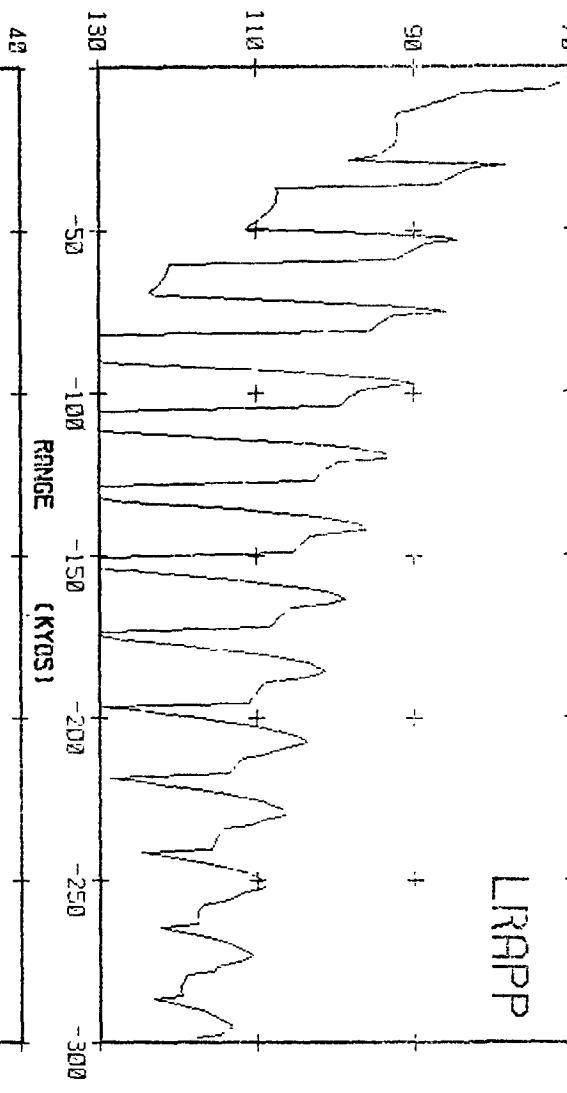
FINGER 30 SUMMER

S 255 R 15E F 1200

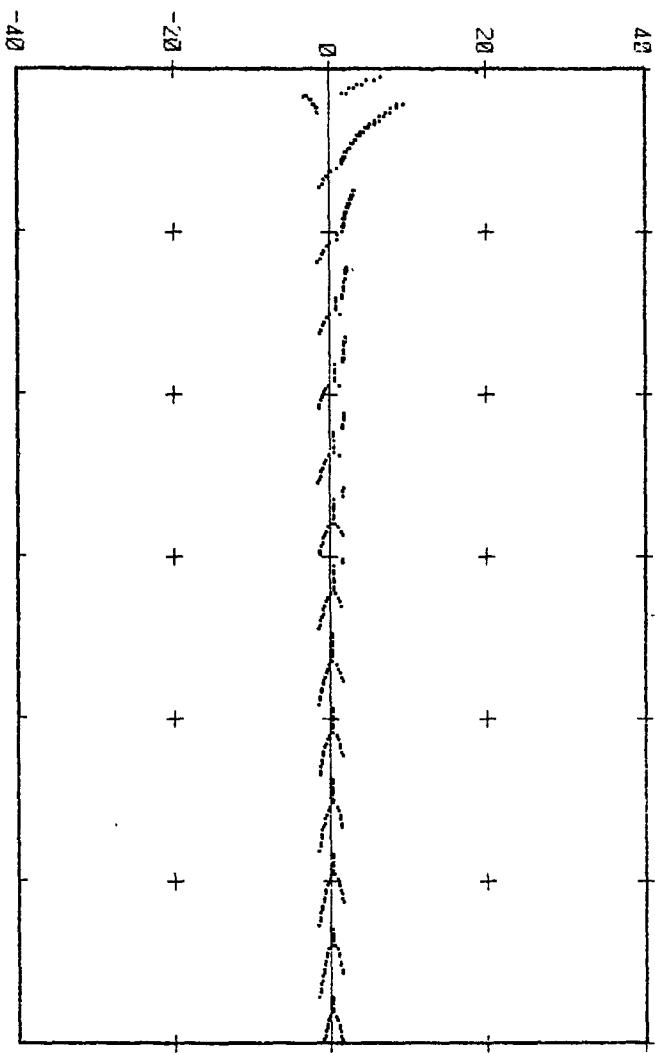
1450 M/S 1500 1550

LRAPP

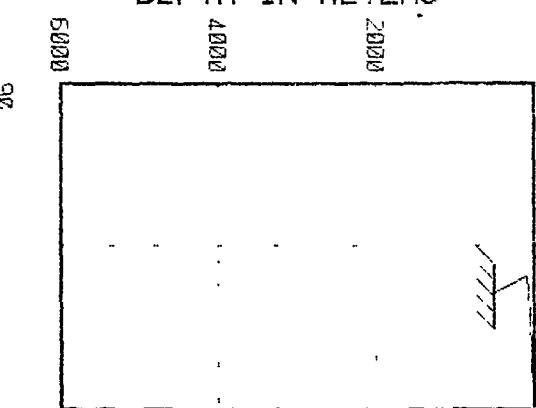
DB LOSS



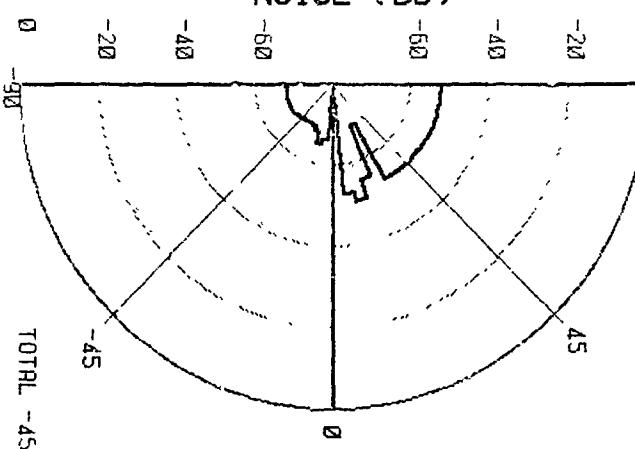
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



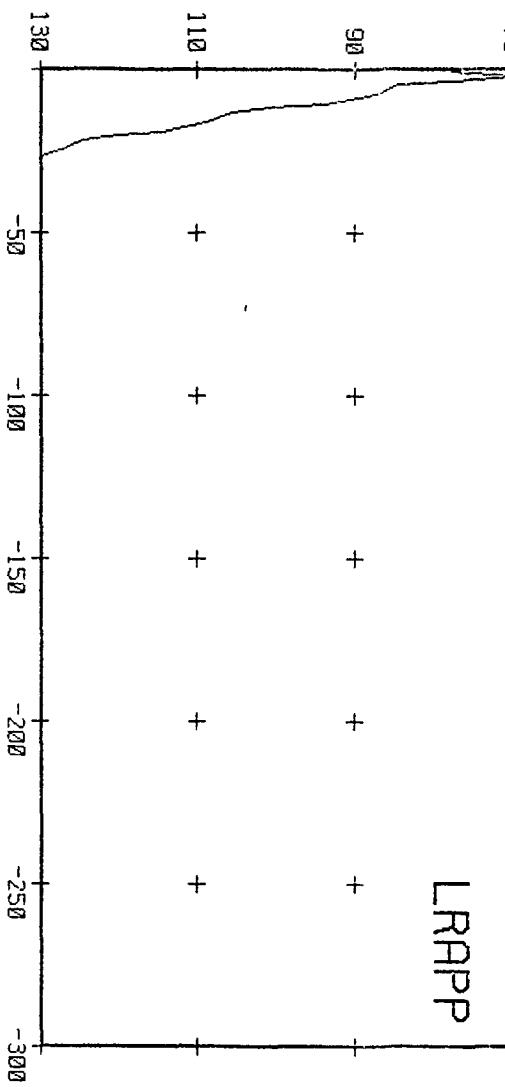
AREA 3A SUMMER

S 20 R 1640 F 1200

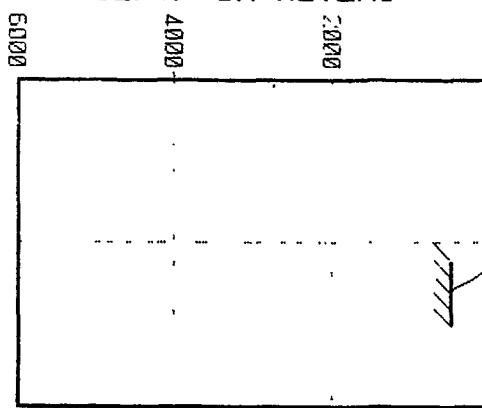
1450 M/S 1500 1550

LRAAPP

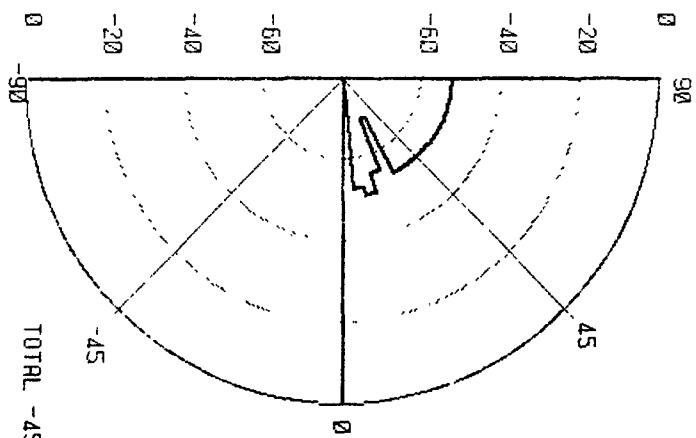
DB LOSS



DEPTH IN METERS



NOISE (DB)



70

AREA 3A SUMMER

S 53 R 1640 F 1260

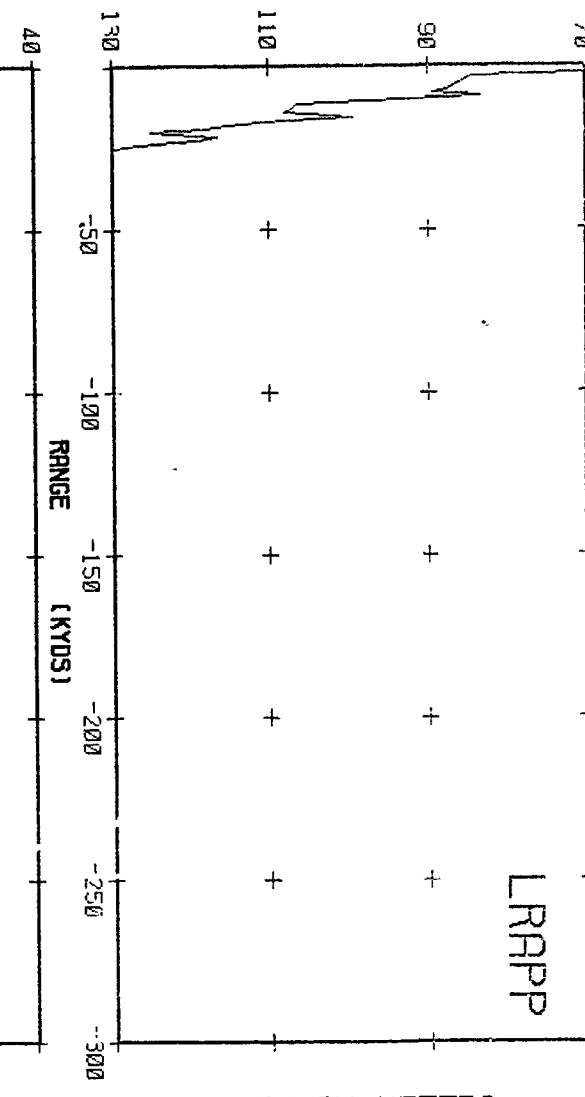
1450 M/S

1500

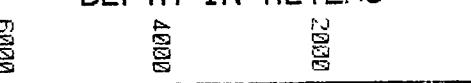
1550

LRAPP

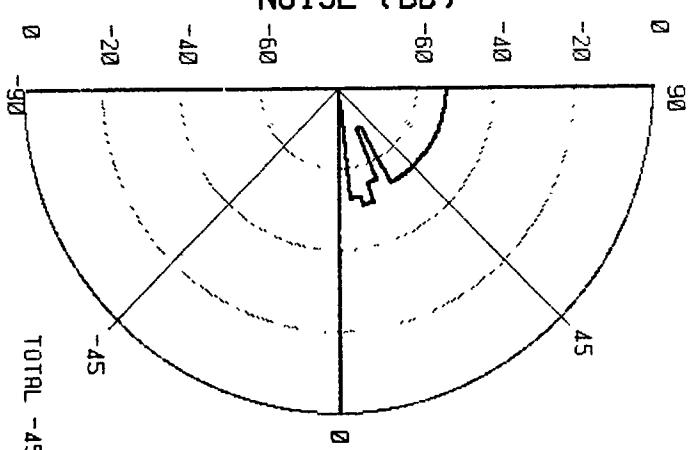
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -45.8 DB

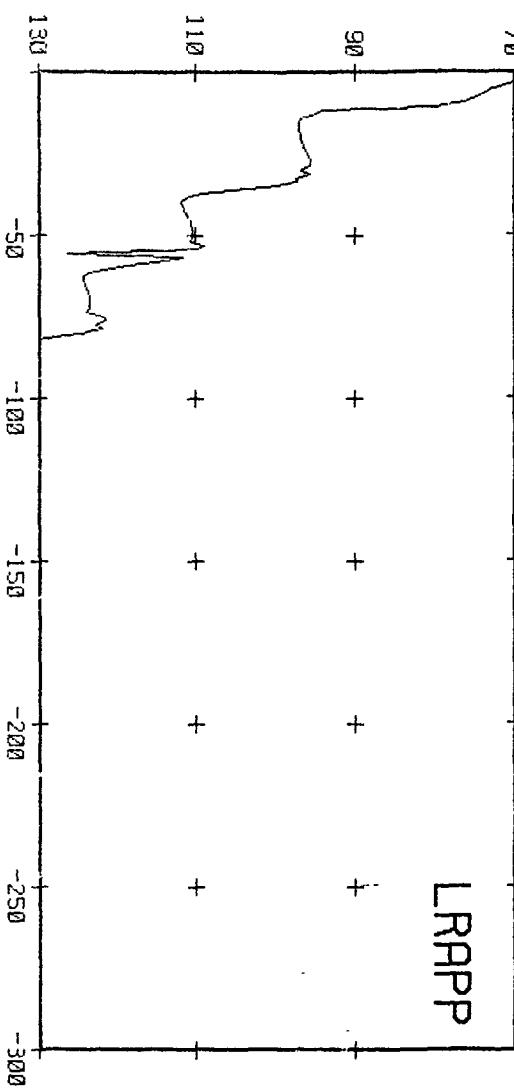
AREA 3A SUMMER

S 233 R 1640 F 1200

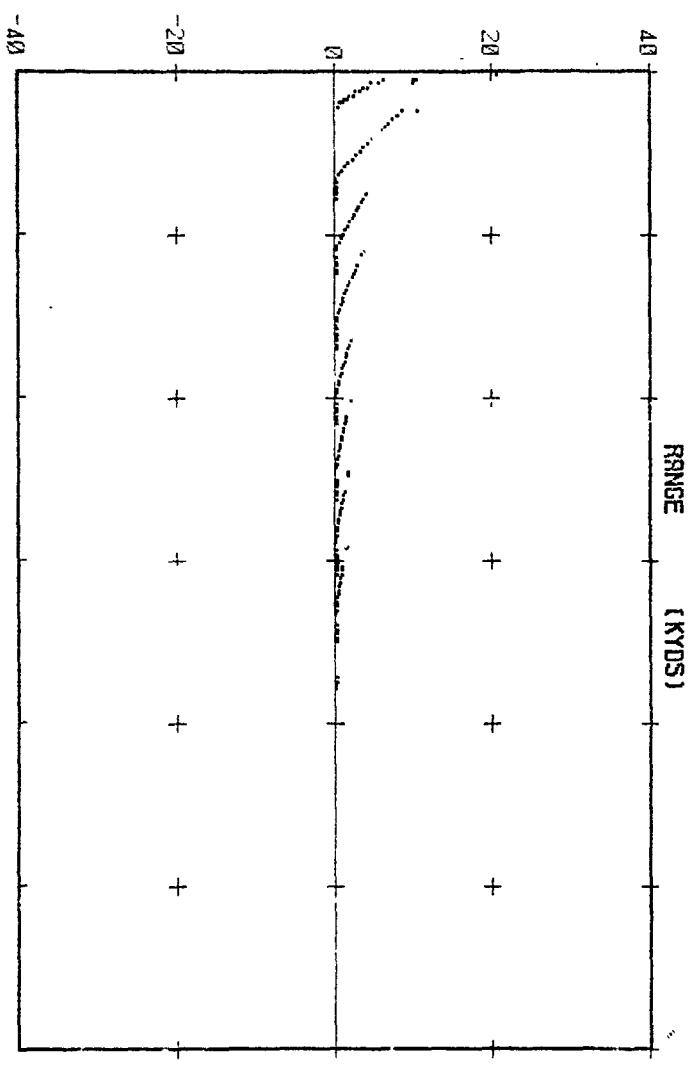
1450 N/S 1500 1550

LRAAPP

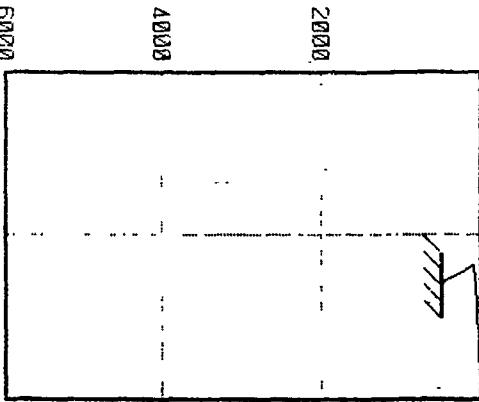
DB LOSS



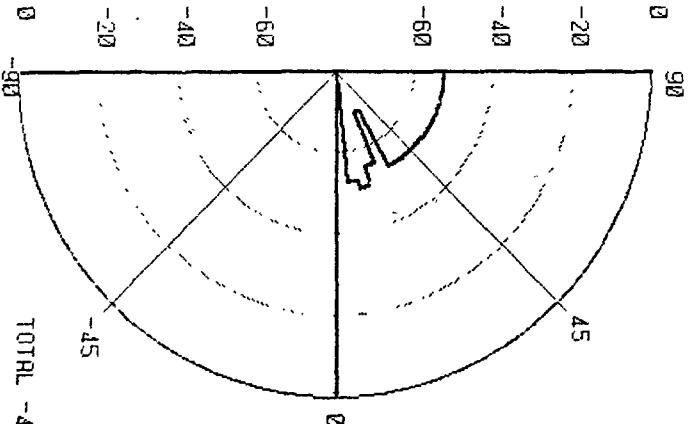
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -45.8 DB

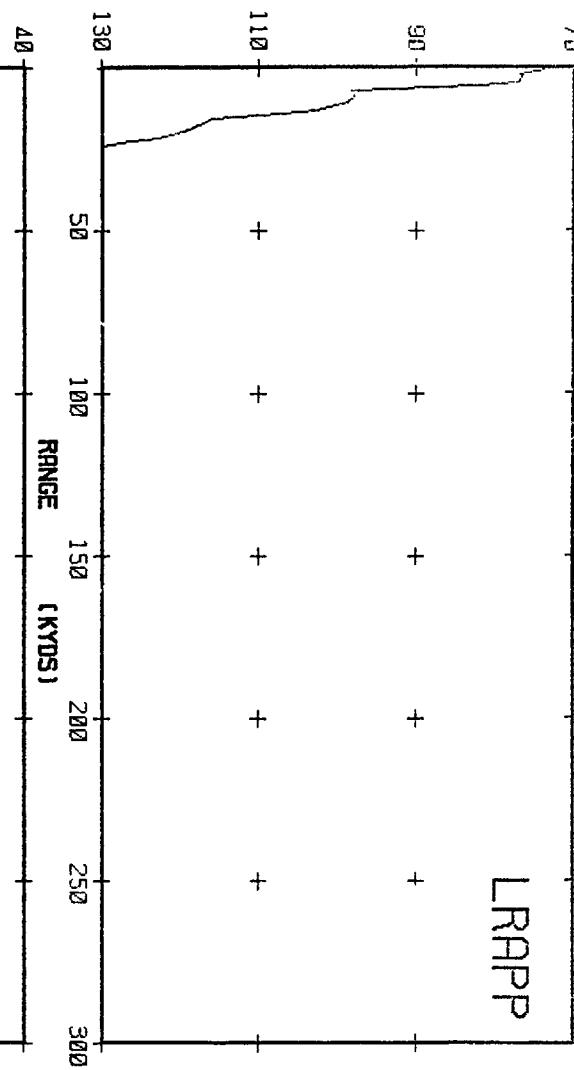
AREA 3A SUMMER

S 20 R 69 F 2000

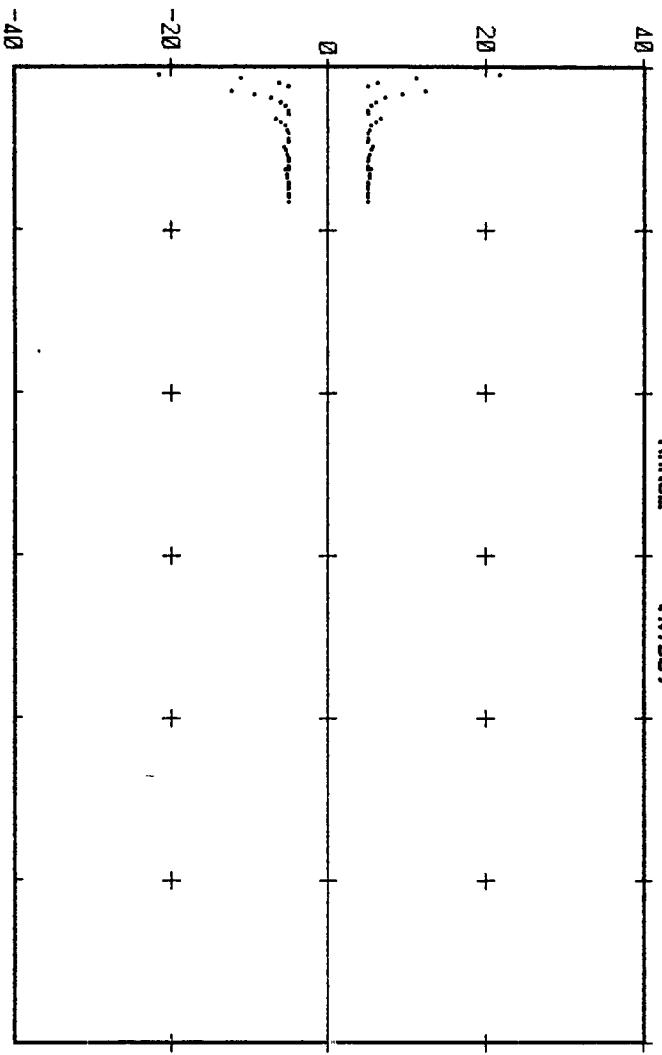
1450 M/S 1500 1550

LRAPP

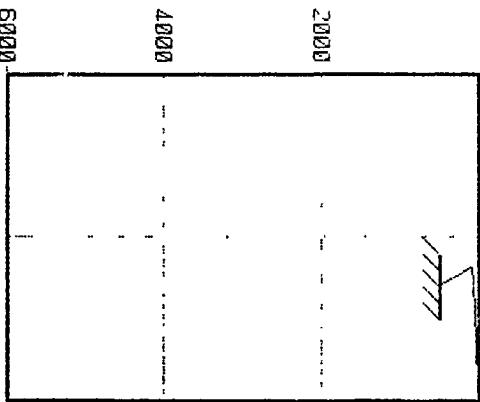
DB LOSS



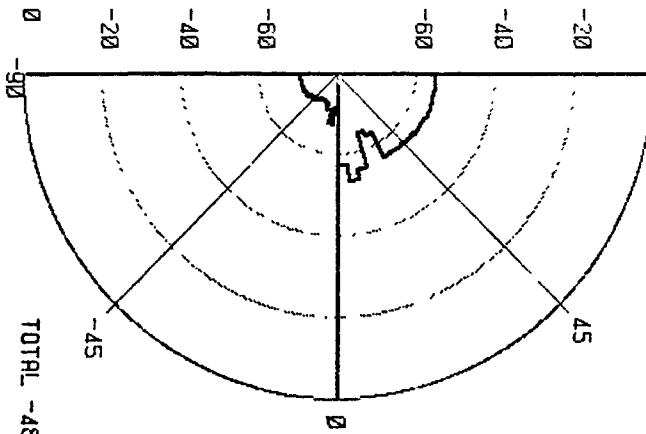
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



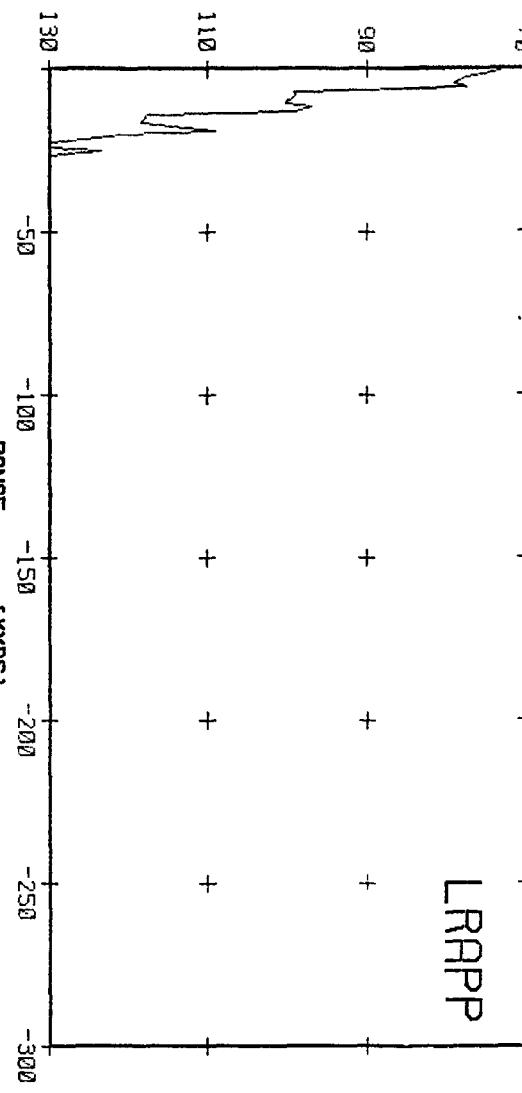
ARER 3R SUMMER

S 50 R 60 F 2000

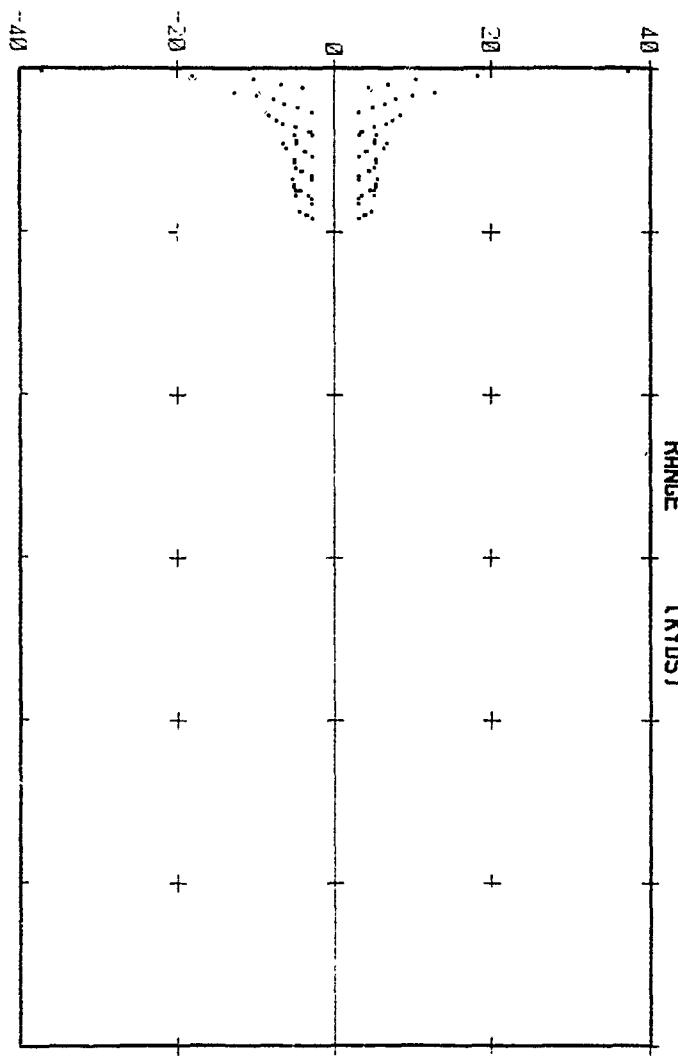
1450 M/S 1500 1550

LRAFP

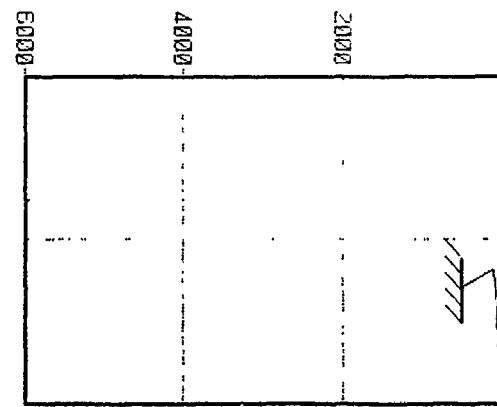
DB LOSS



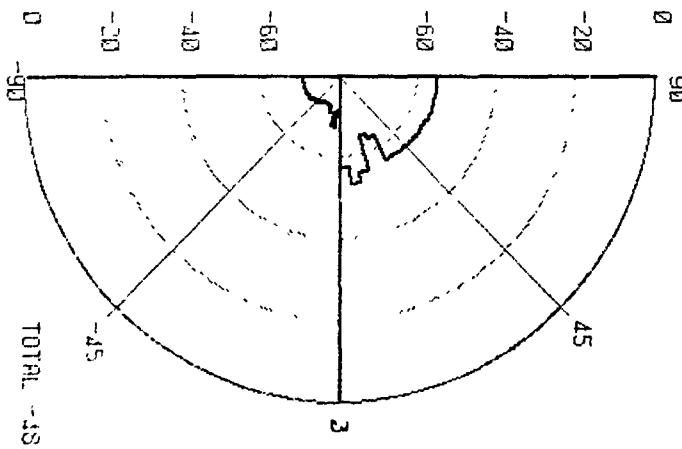
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -45.5 dB

70

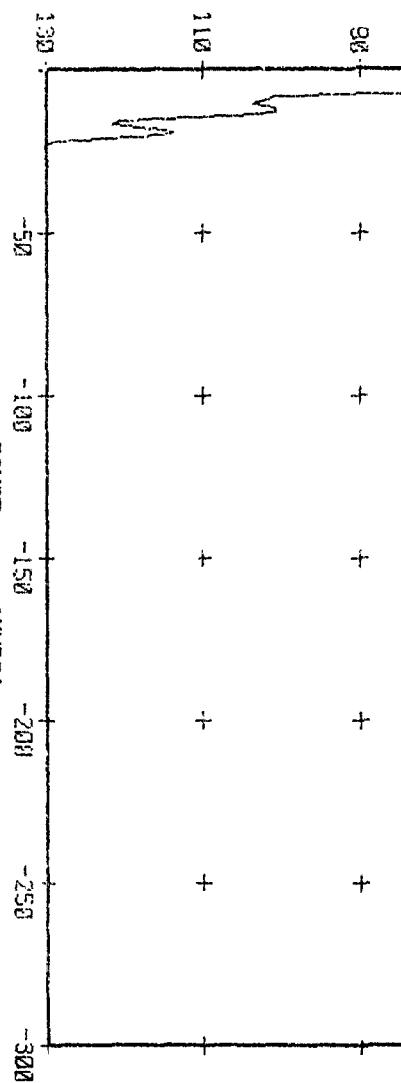
ARER 3A SUMMER

S 233 R 60 F 2000

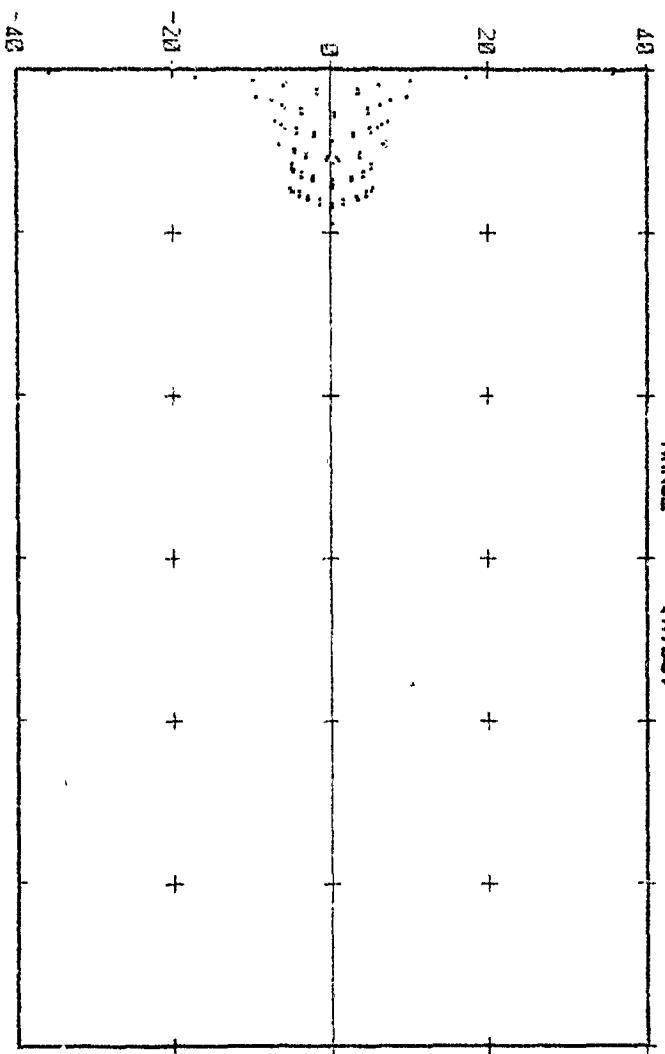
1450 M/S 1500 1550

LRAPP

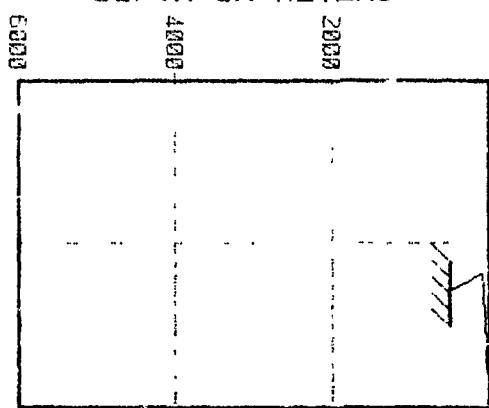
DB LOSS



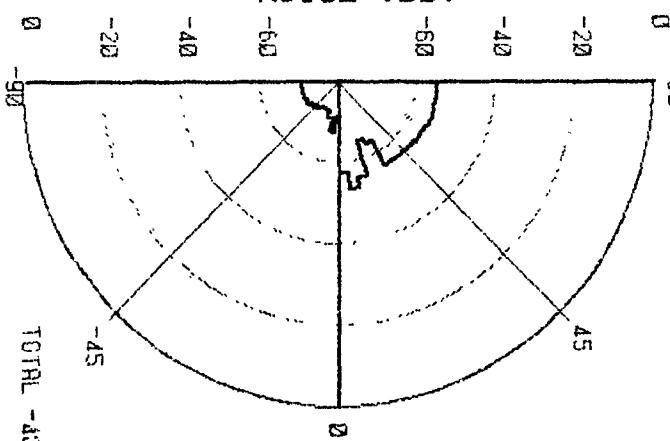
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -43.3 DB

AREA 3A SUMMER

S 20 R 133 F 2000

1450 M/S

1500

1550

LRAFP

DB LOSS

+ + + + +

130
110
90
70

2000
4000
6000

DEPTH IN METERS

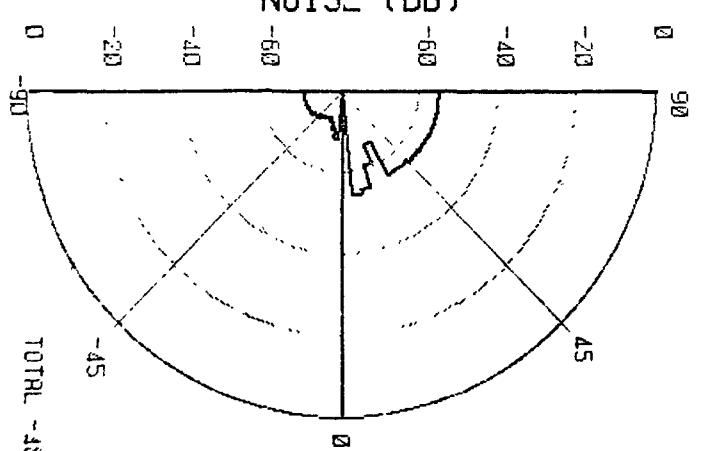
ARRIVAL ANGLE

-20 +
0 +
20 +
40 +
60 +
80 +
100 +
120 +
140 +
160 +
180 +
200 +
220 +
240 +
260 +
280 +
300 +

-300
-250
-200
-150
-100
-50
0

RANGE (KYDS)

NOISE (DB)



AREA 3A SUMMER

S 50 R 133 F 2000

1450 M/S 1500 1550

LRAAPP

DB LOSS

90 + + + + +

DEPTH IN METERS

2000

4000

6000

110 + + + + +

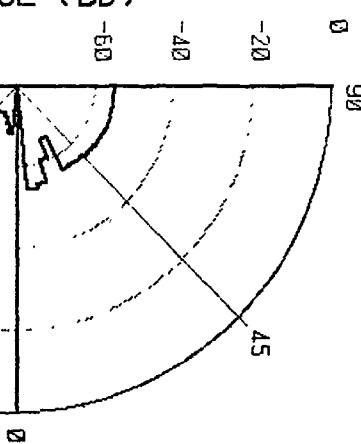
0 90

130 -50 -100 -150 -200 -250 -300

RANGE (KMS)

20 + + + + +

NOISE (DB)



ARRIVAL ANGLE

-40

0 -30 -20 -10

TOTAL -48.8 DB

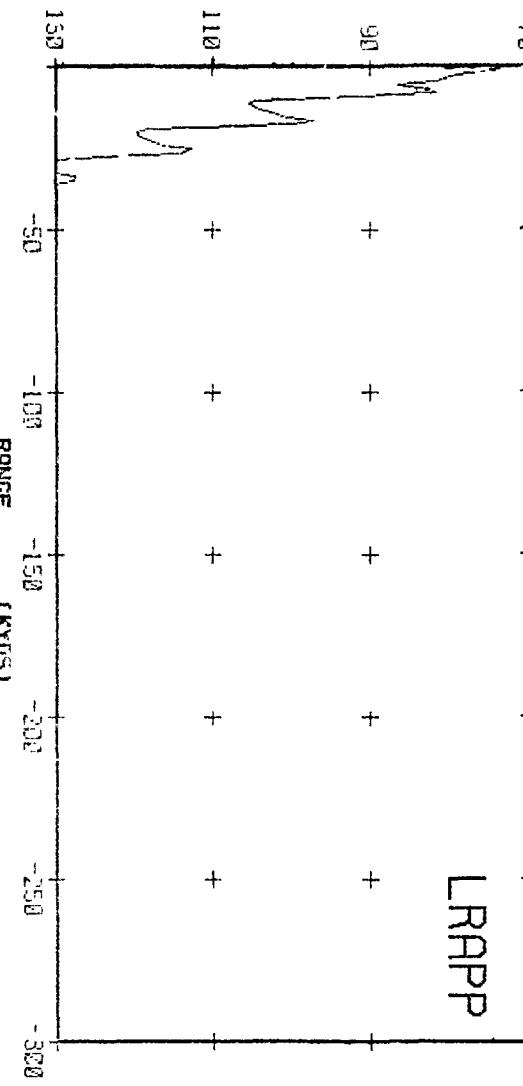
AREA 3A SUMMER

S 233 R 133 F 2000

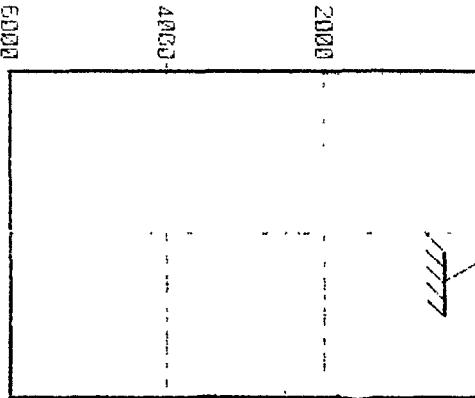
1450 M/S 1500 1550

L RAPP

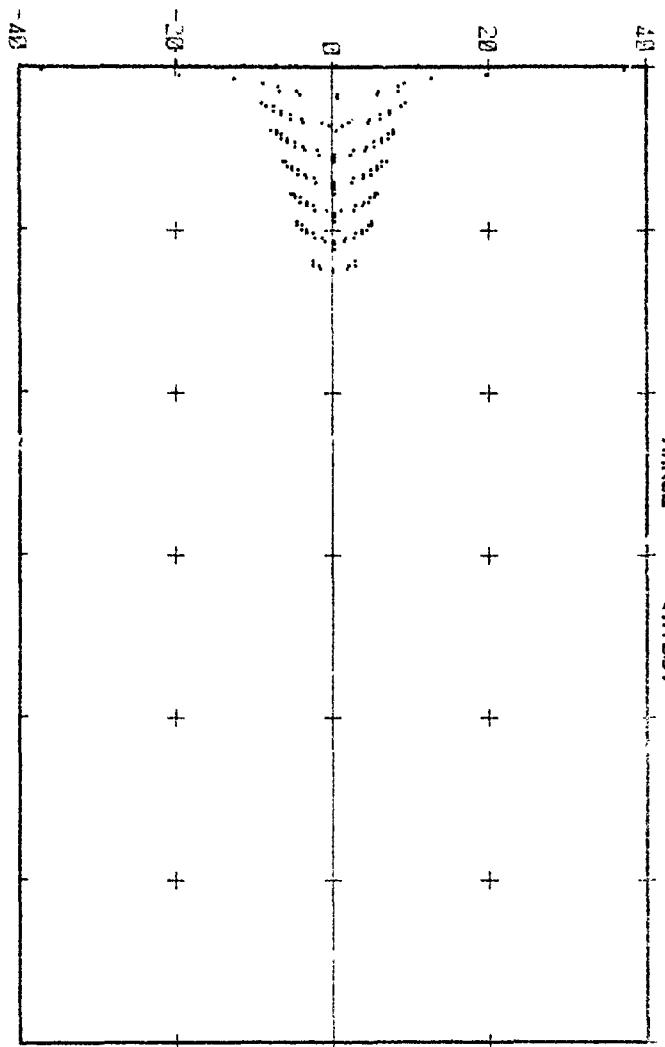
DB LOSS



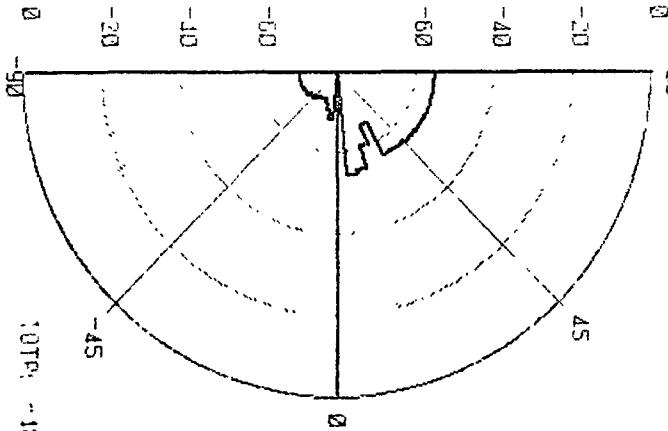
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



70

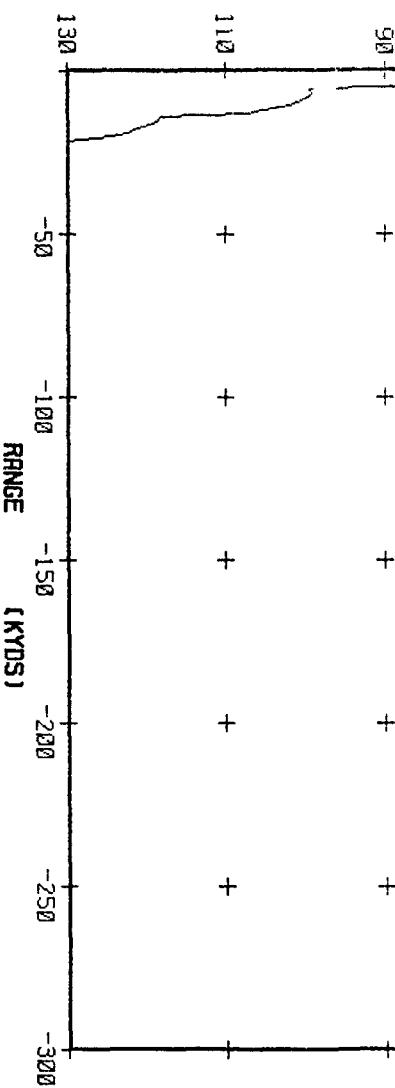
AREA 3A SUMMER

S 20 R 262 F 2000

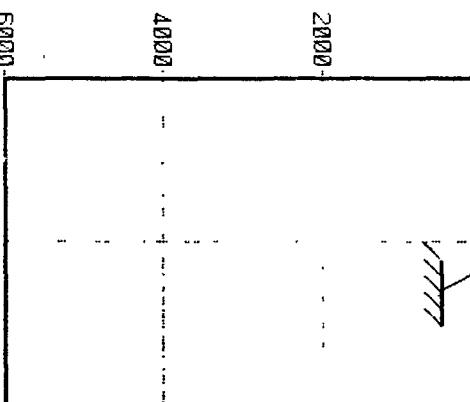
1450 M/S 1500 1550

LRAPP

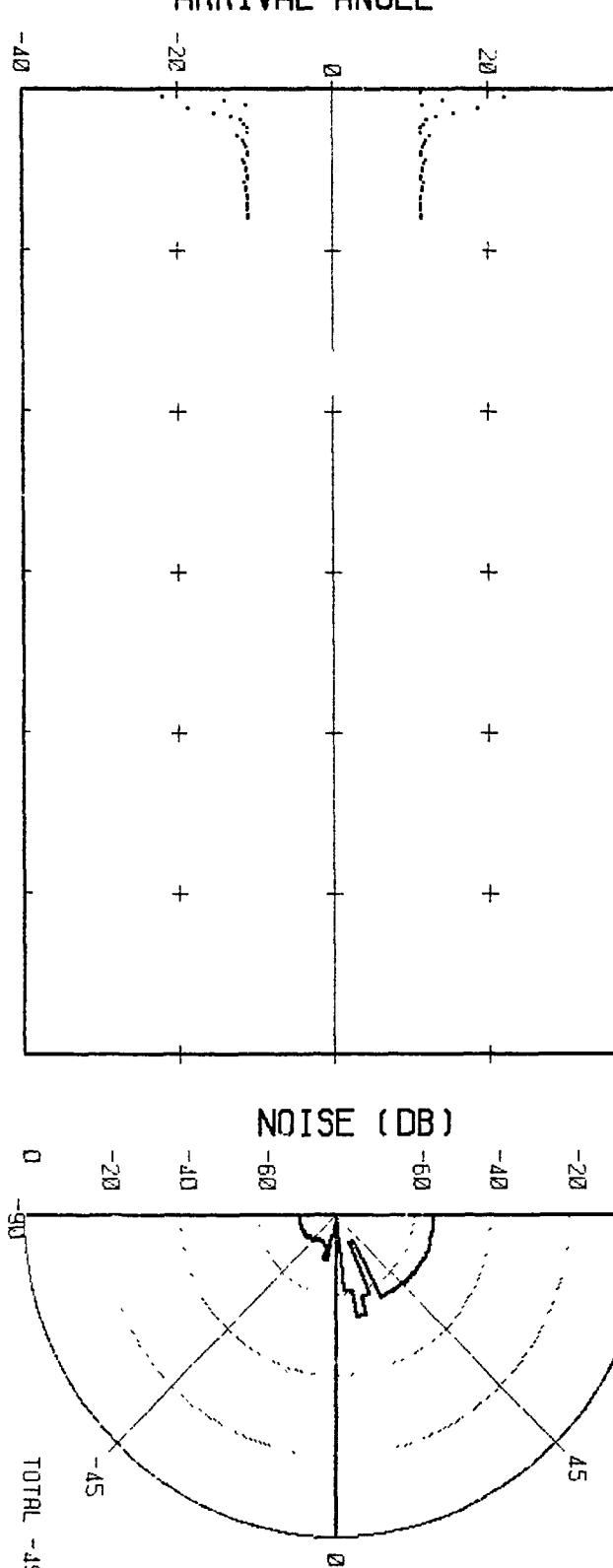
DB LOSS



DEPTH IN METERS



NOISE (DB)



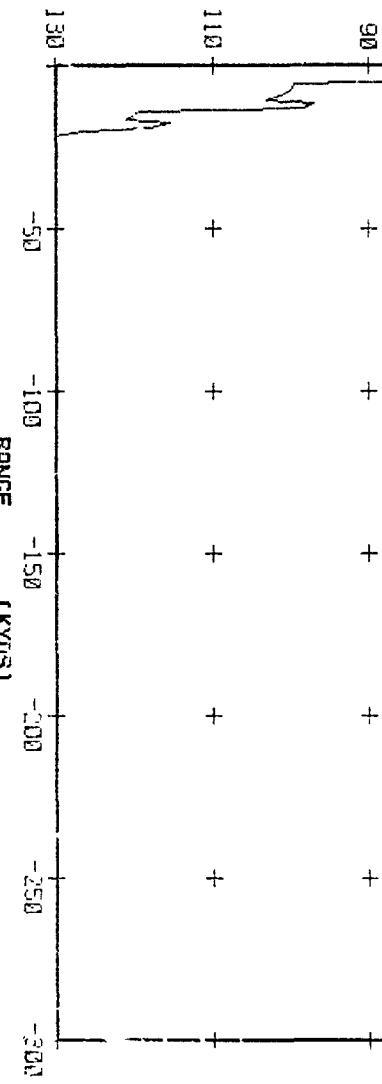
AREA 3A SUMMER

S 50 R 262 F 2820

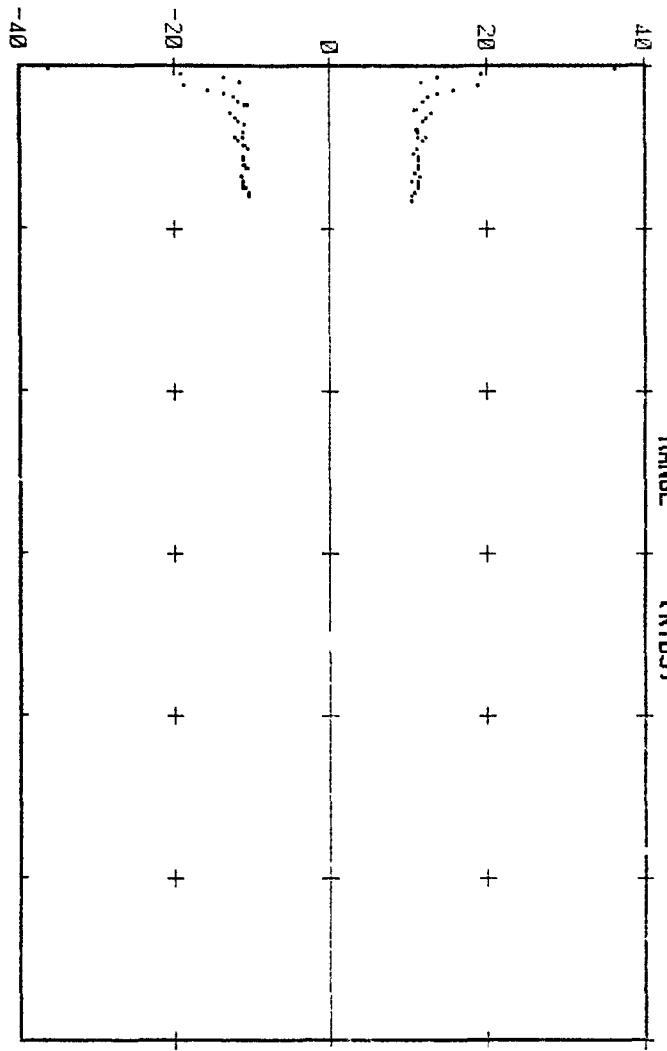
1450 11/5 1500 1550

L RAPP

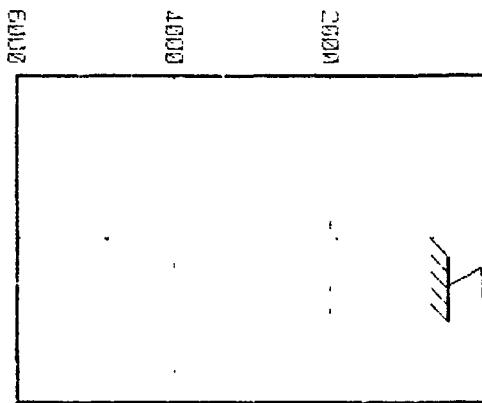
DB LOSS



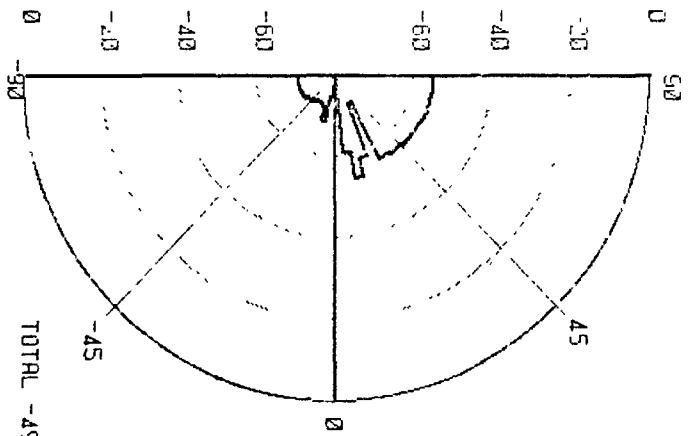
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

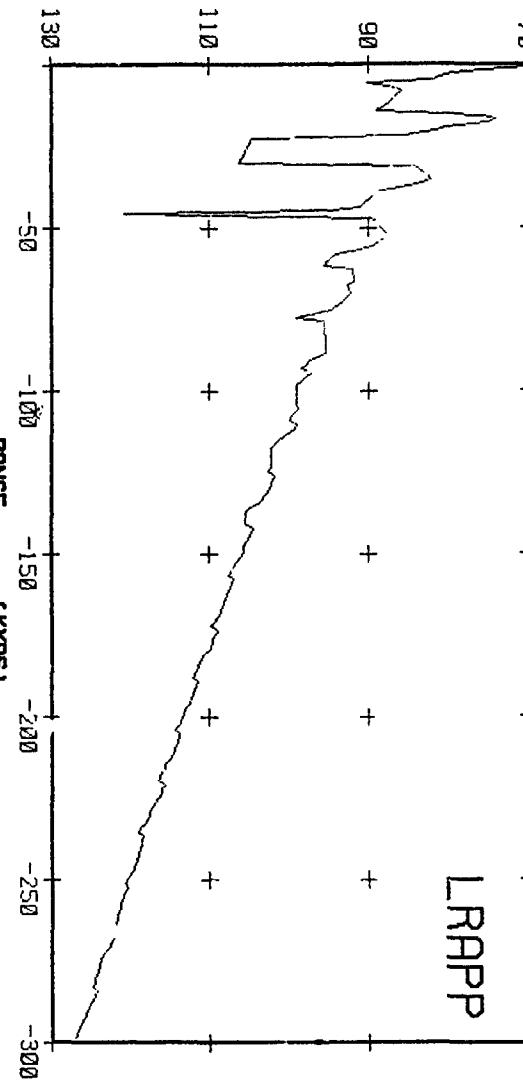
AREA 30 SUMMER

S 233 R 262 F 2000

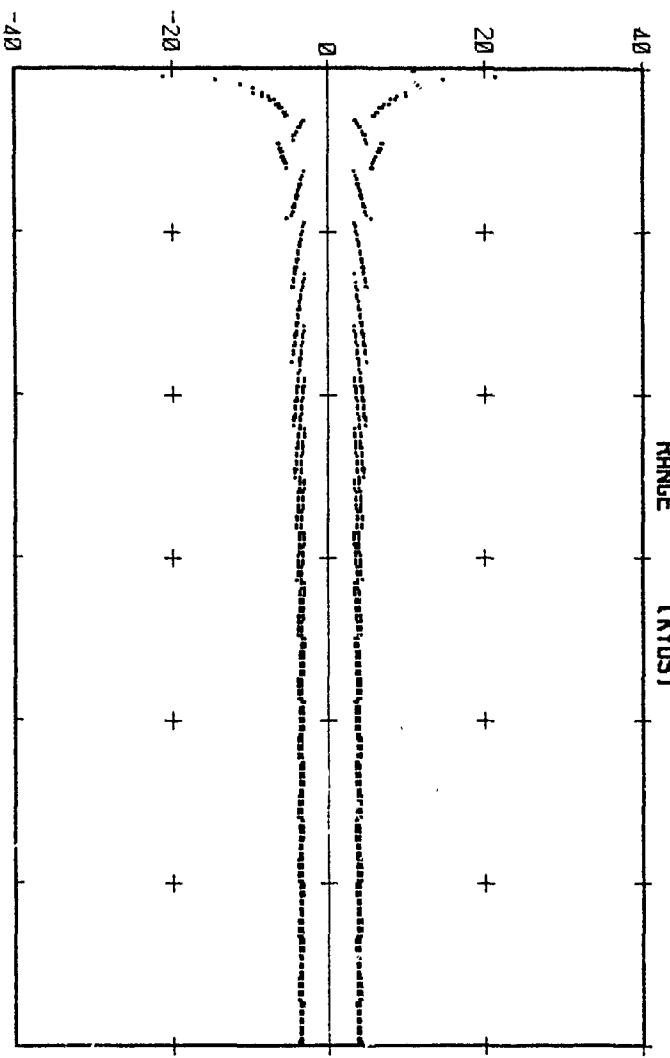
1450 M/S 1500 1550

LRAPP

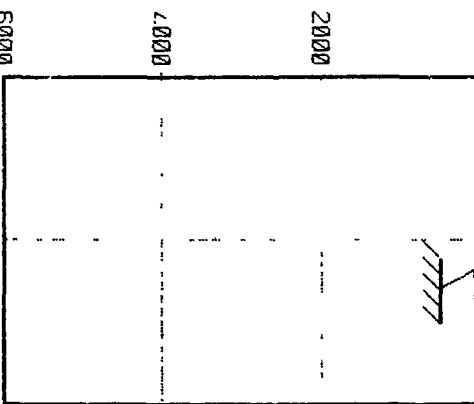
DB LOSS



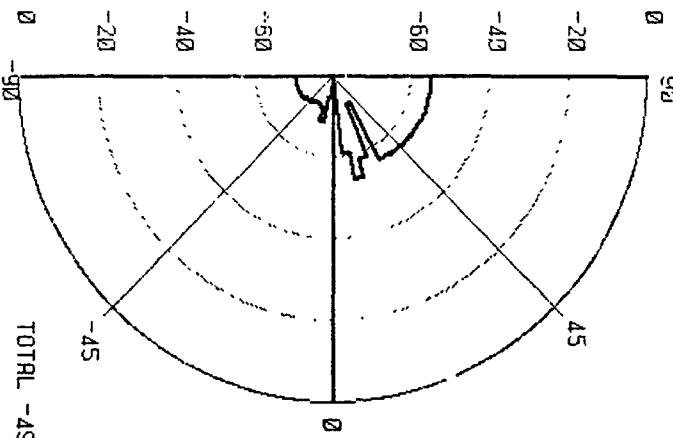
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



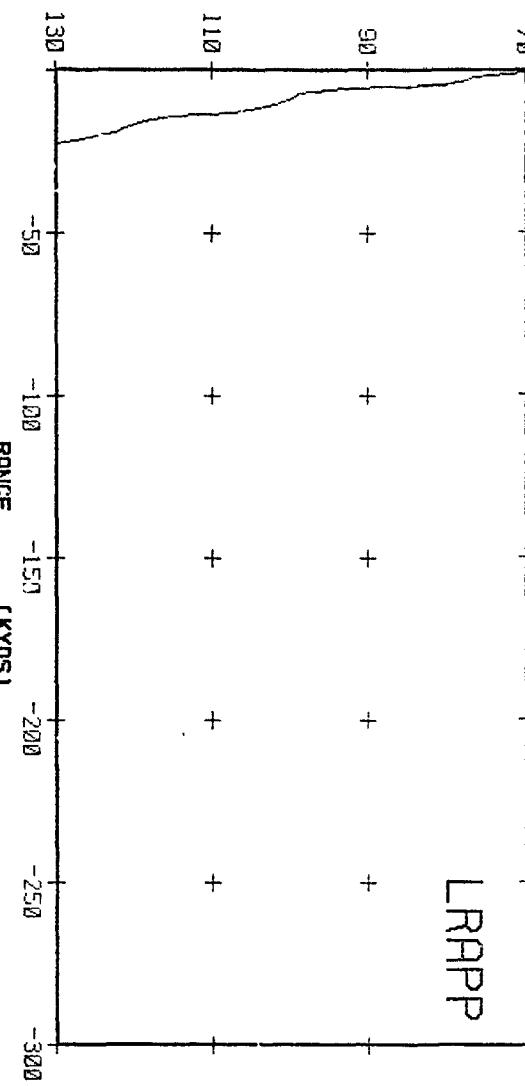
AREA 3A SUMMER

S 20 R 300 F 2060

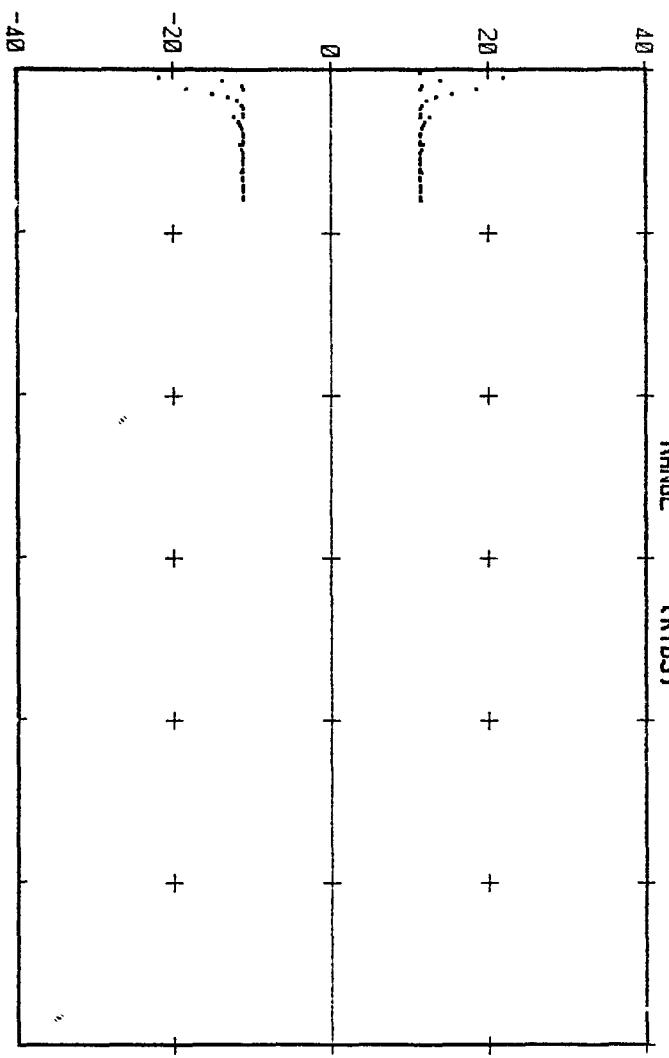
1450 M/S 1500 1550

LRRAPP

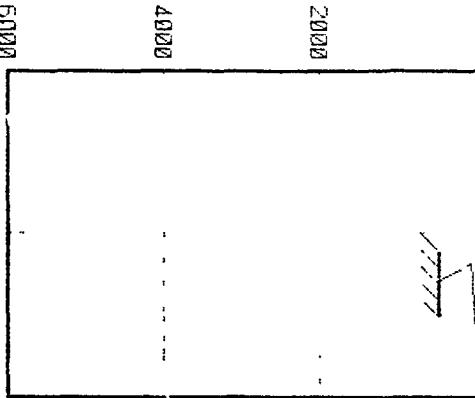
DB LOSS



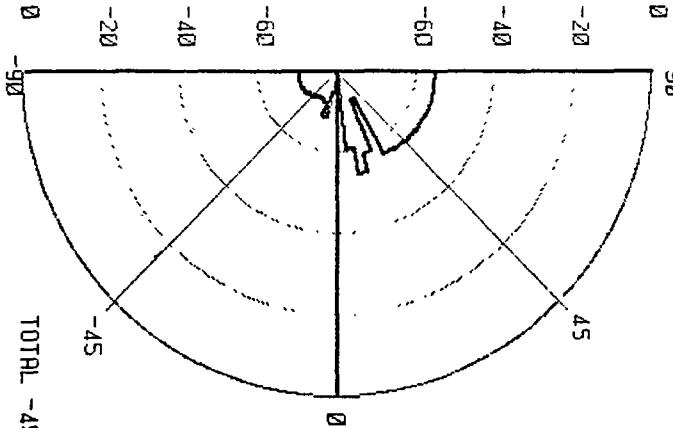
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -49.1 DS

70

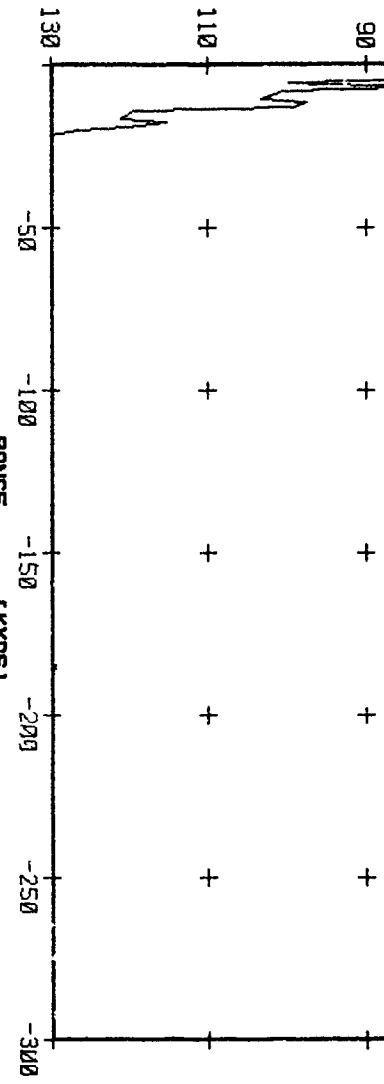
AREA 3A SUMMER

S 58 R 300 F 2000

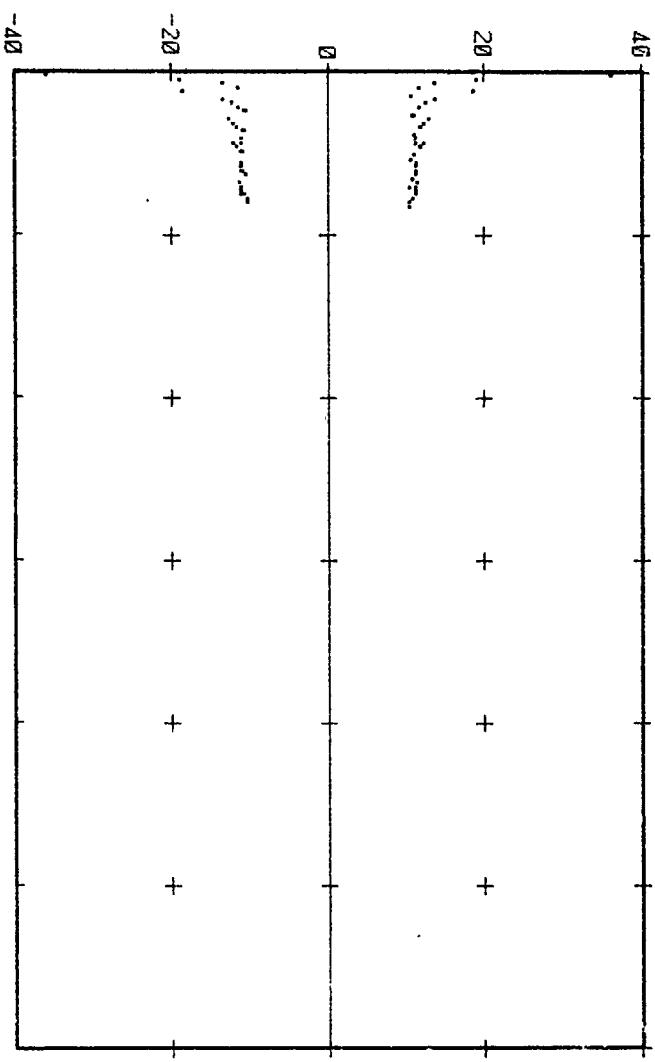
1450 M/S 1500 1558

LRAPP

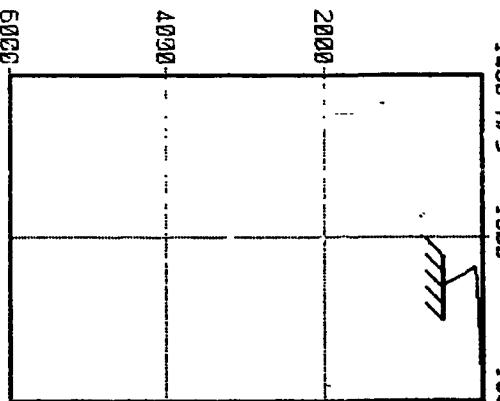
DB LOSS



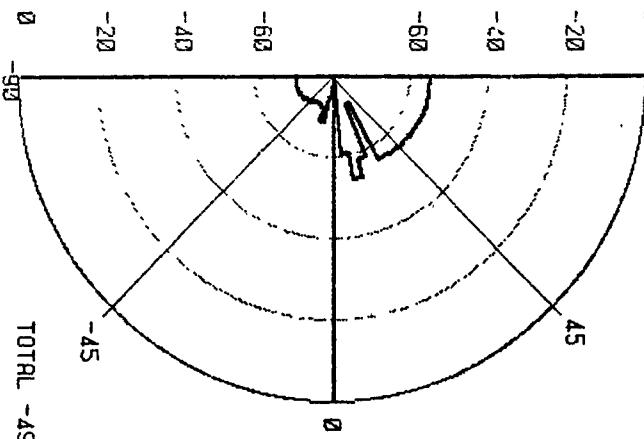
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



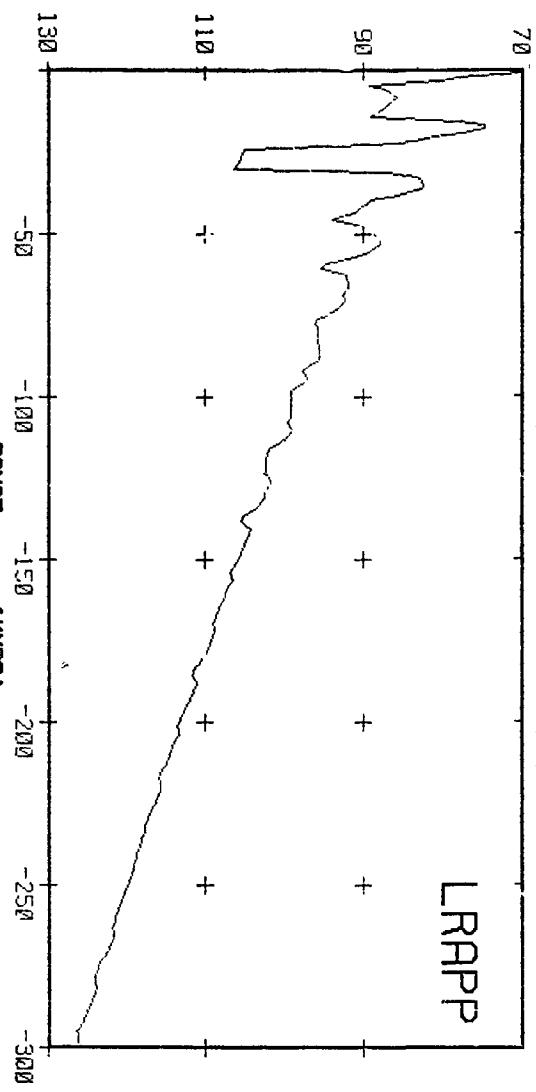
TOTAL -49.1 DB

ARER 3R SUMMER

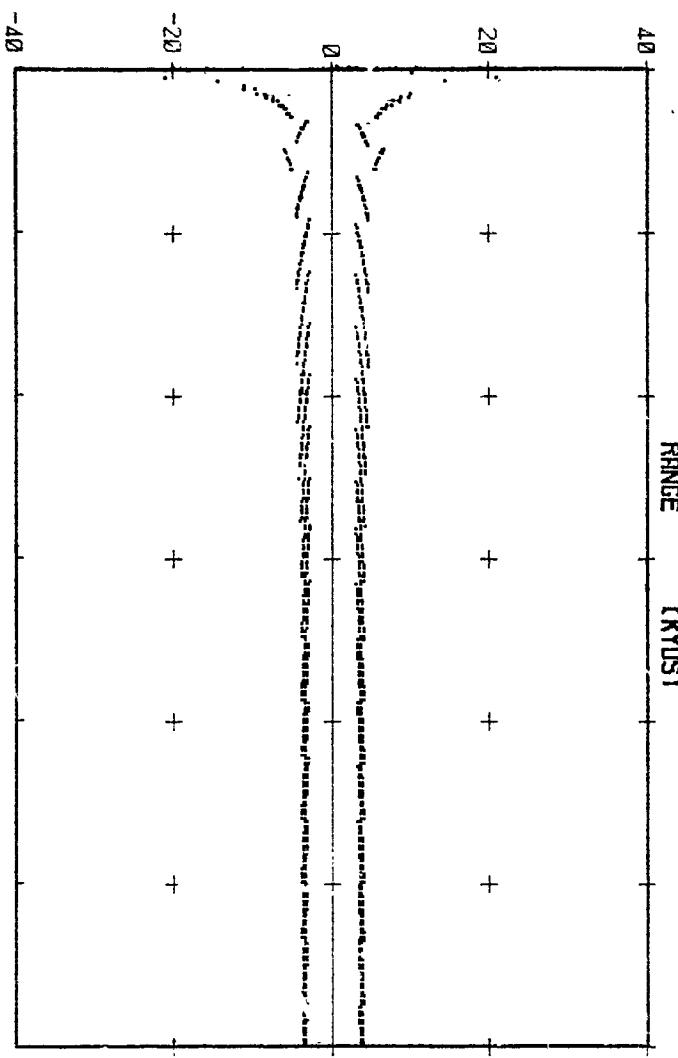
S 233 R 300 F 2000

1450 M/S 1500 1550

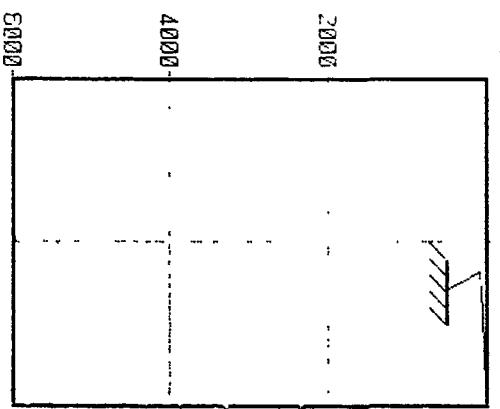
DB LOSS



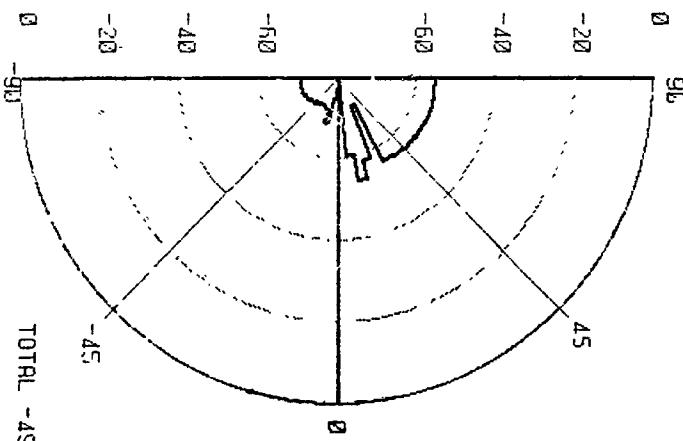
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -49.1 DB

70

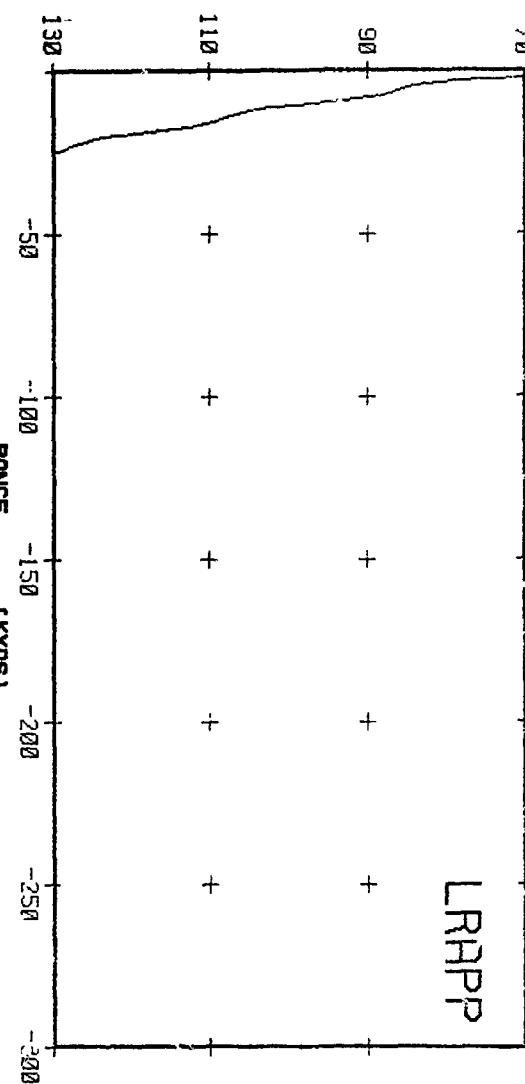
AREA 3A SUMMER

S 20 R 1400 F 2000

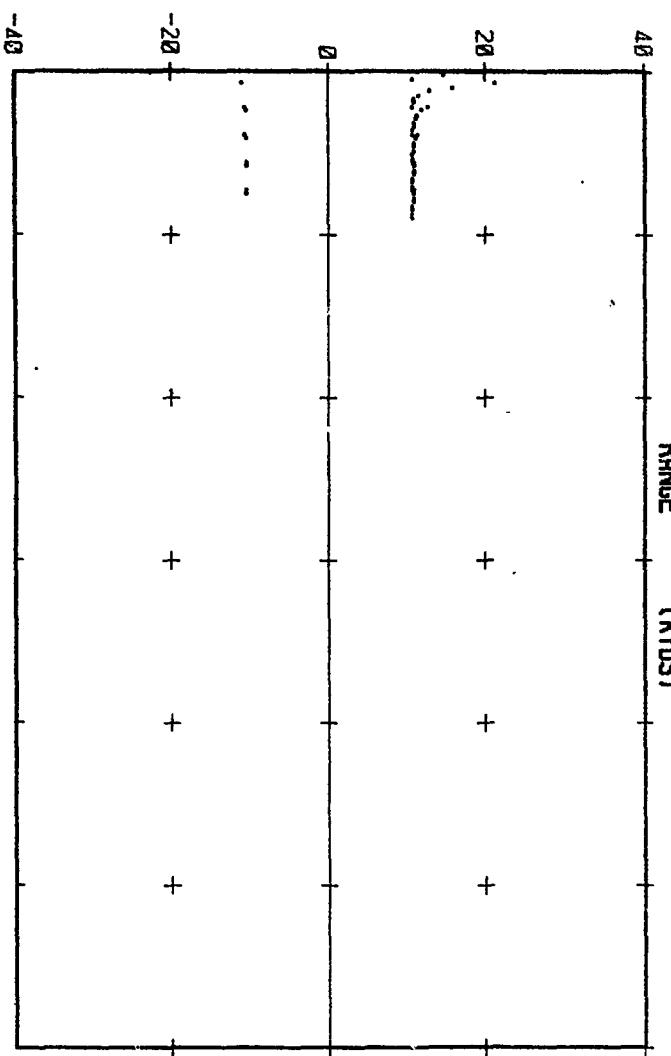
1450 M/S 1500 : 1550

LRHPP

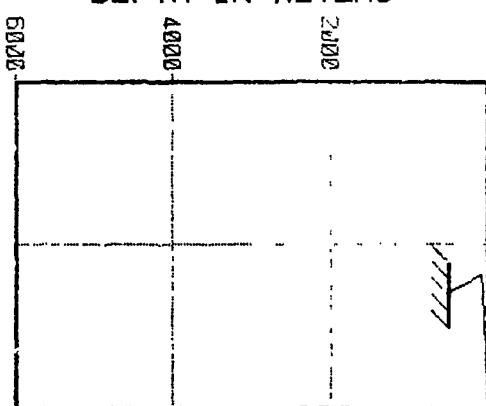
DB LOSS



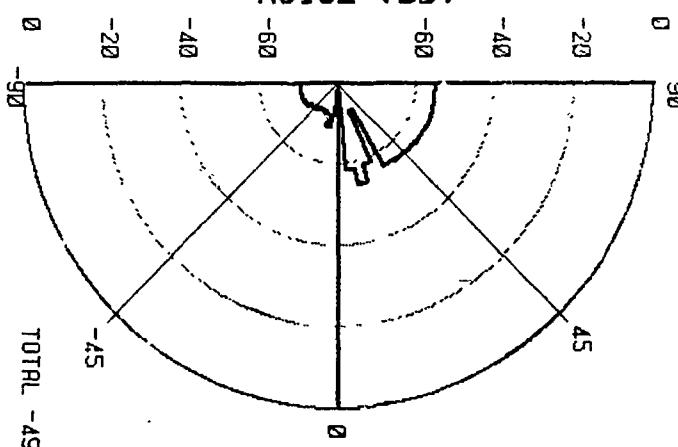
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -49.1 DB

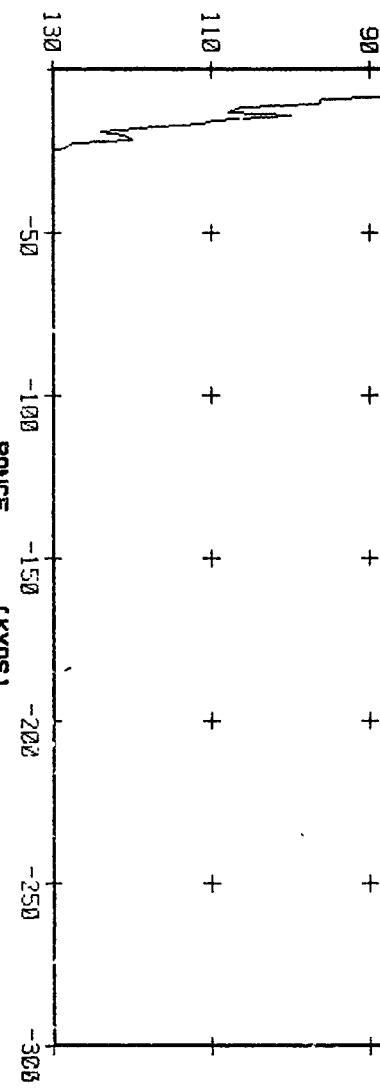
AREA 3A SUMMER

S 50 R 1000 F 2000

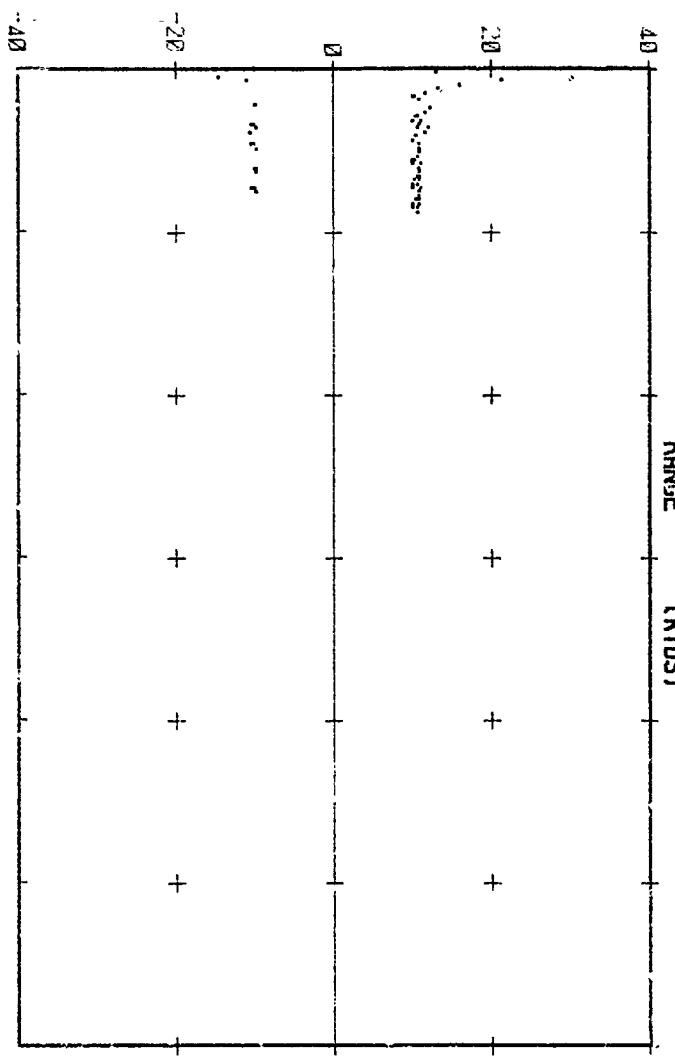
1450 M/S 1500 1550

L RAPP

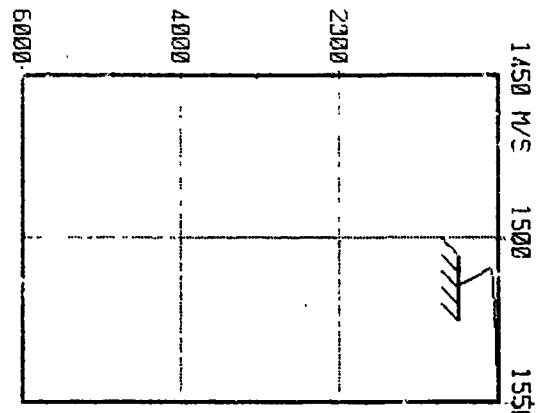
DB LOSS



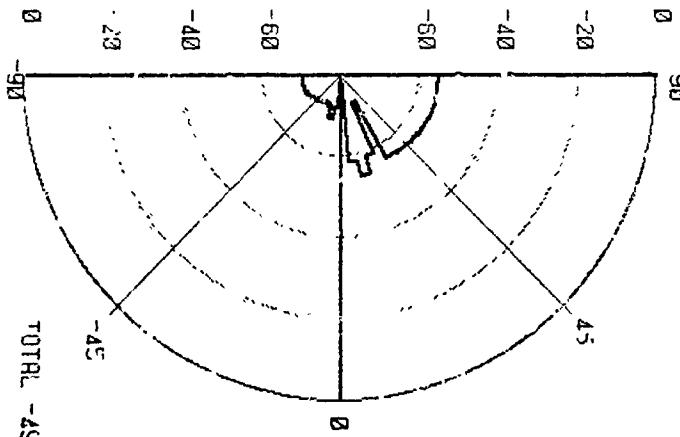
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

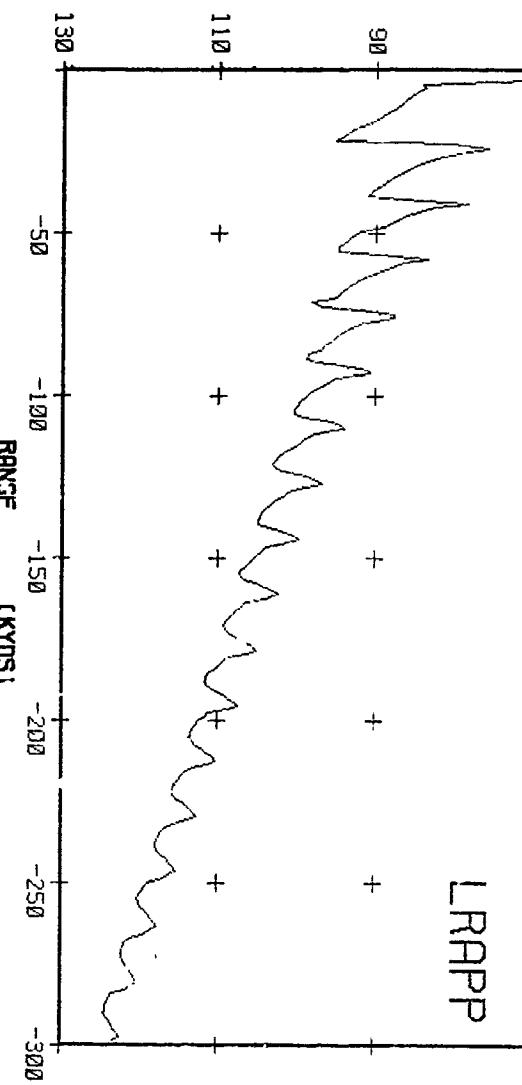


71

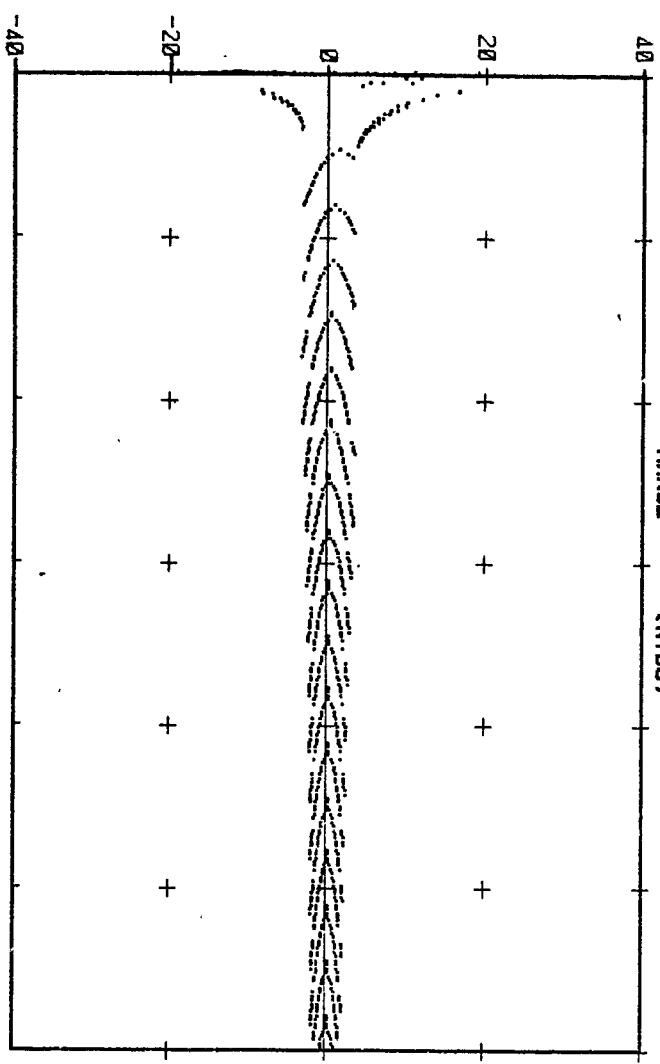
AREA 3A SUMMER S 233 R 1000 F 2003

1450 M/S 1500 1550

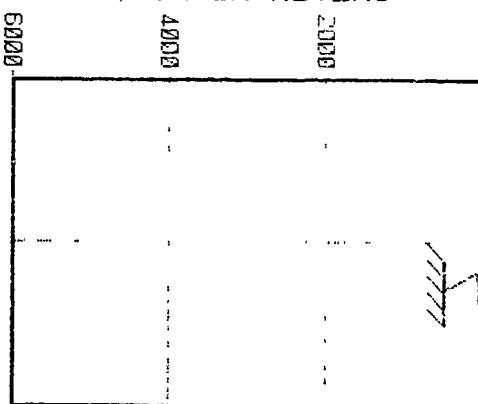
DB LOSS



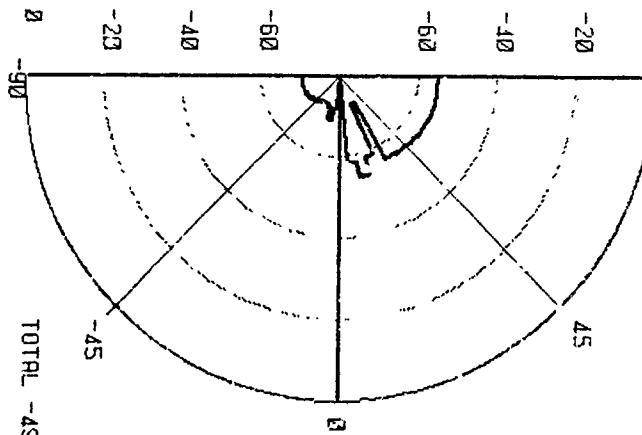
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -49.1 DB

AREA 3A SUMMER

S 20 R 1500 F 2000

1450 M/S 1500 1550

LRAPP

DB LOSS

90 + + + +

110

+ + + + +

130

-50 -100 -150 -200 -250 -300

RANGE

(KIOSI)

ARRIVAL ANGLE

-40 -20 0 20 40

+ + + + + + + +

DEPTH IN METERS

2000

4000

6000

8000

10000

12000

14000

16000

18000

20000

22000

24000

26000

28000

30000

32000

34000

36000

38000

40000

42000

44000

46000

48000

50000

52000

54000

56000

58000

60000

62000

64000

66000

68000

70000

72000

74000

76000

78000

80000

82000

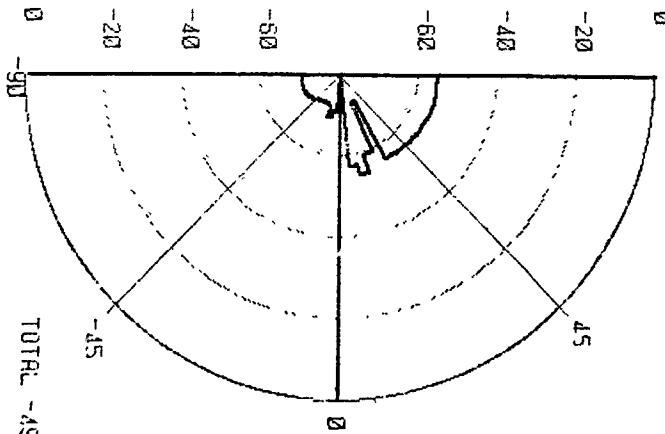
84000

86000

88000

90000

NOISE (DB)



TOTAL -49.1 DB

73

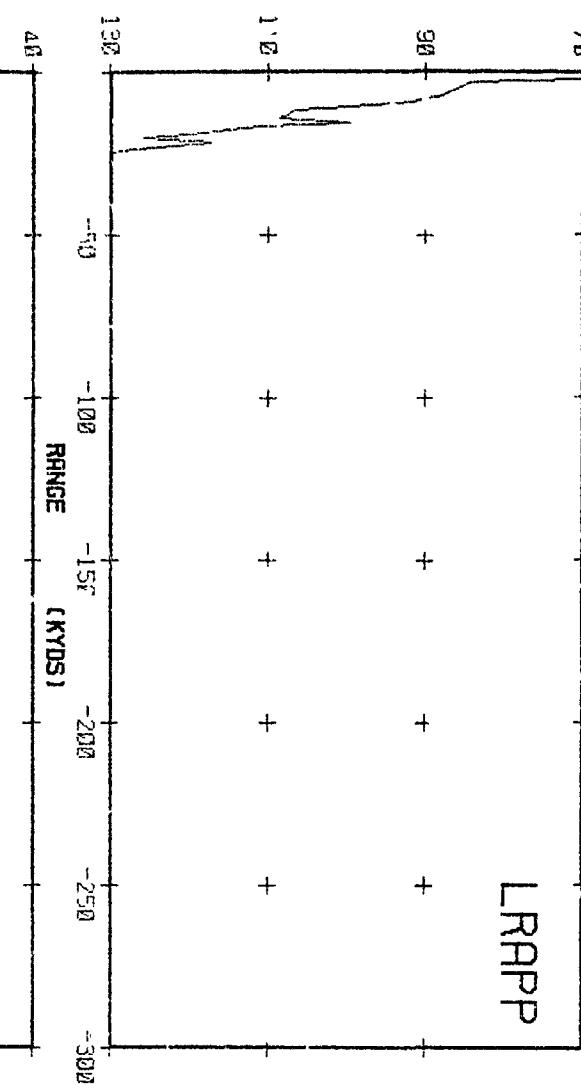
AREA 3A SUMMER

S 50 R 1500 F 2000

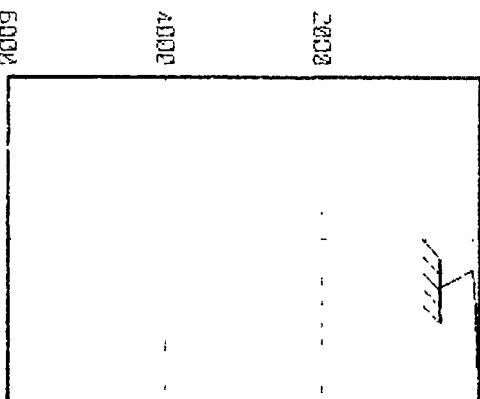
1450 M/S 1500 1550

LRAPP

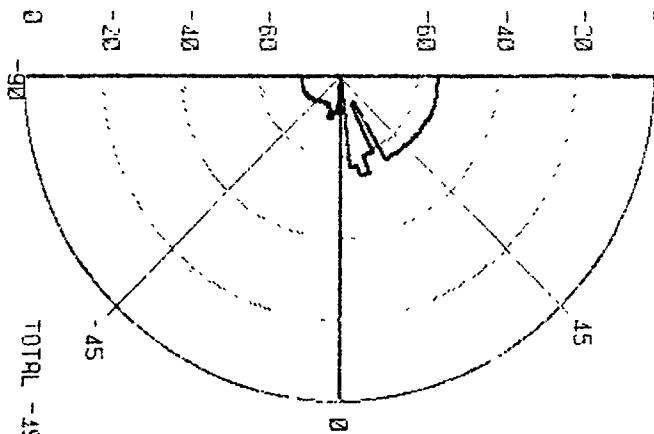
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -49.1 DB

7.0

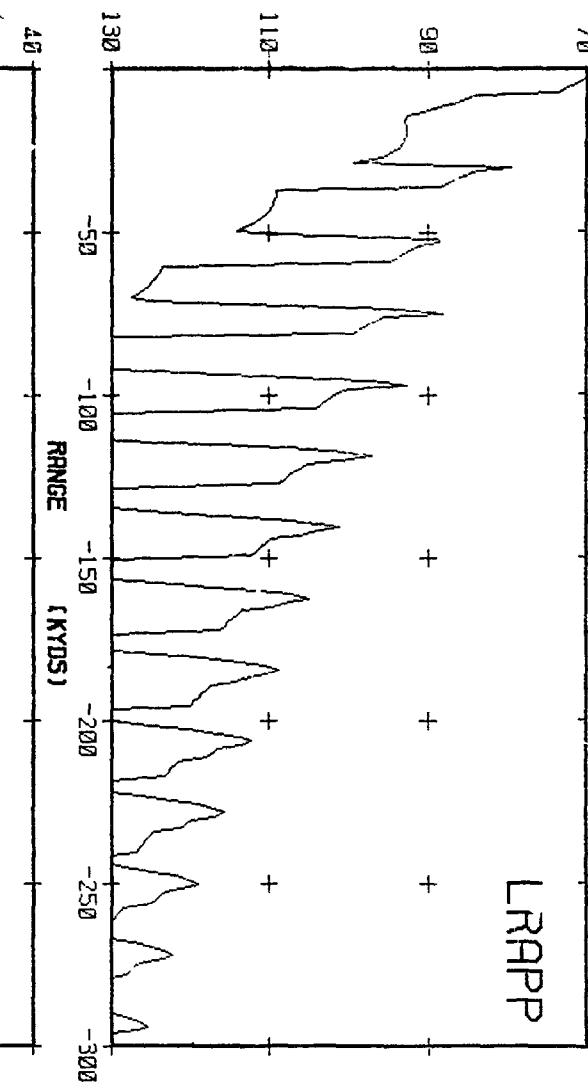
ARRER 3A SUMMER

S 233 R 1500 F 2000

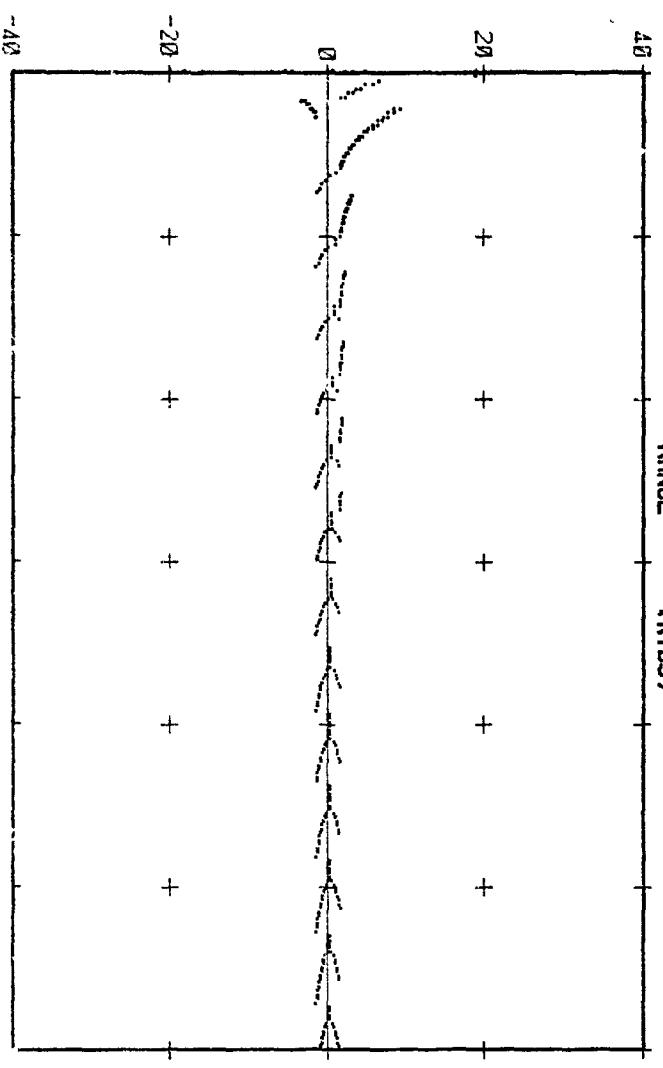
1450 M/S 1500 1550

LRAPP

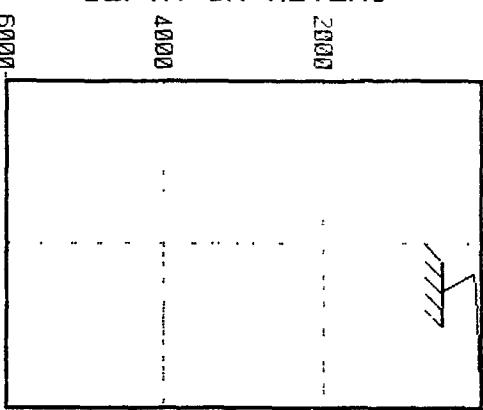
DB LOSS



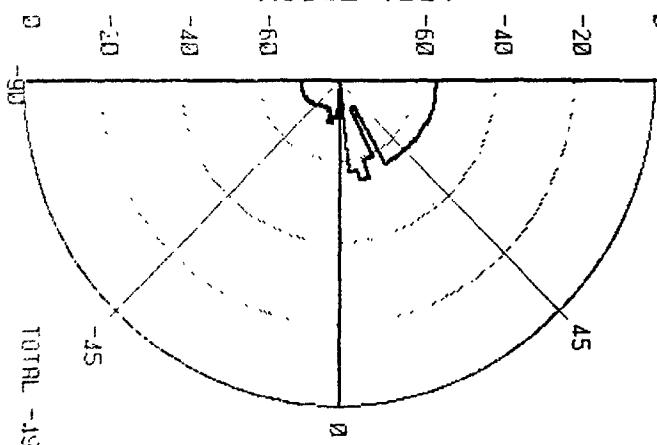
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -49.1 DB

78

AREA 3A SUMMER

S 20 R 1640 F 2000

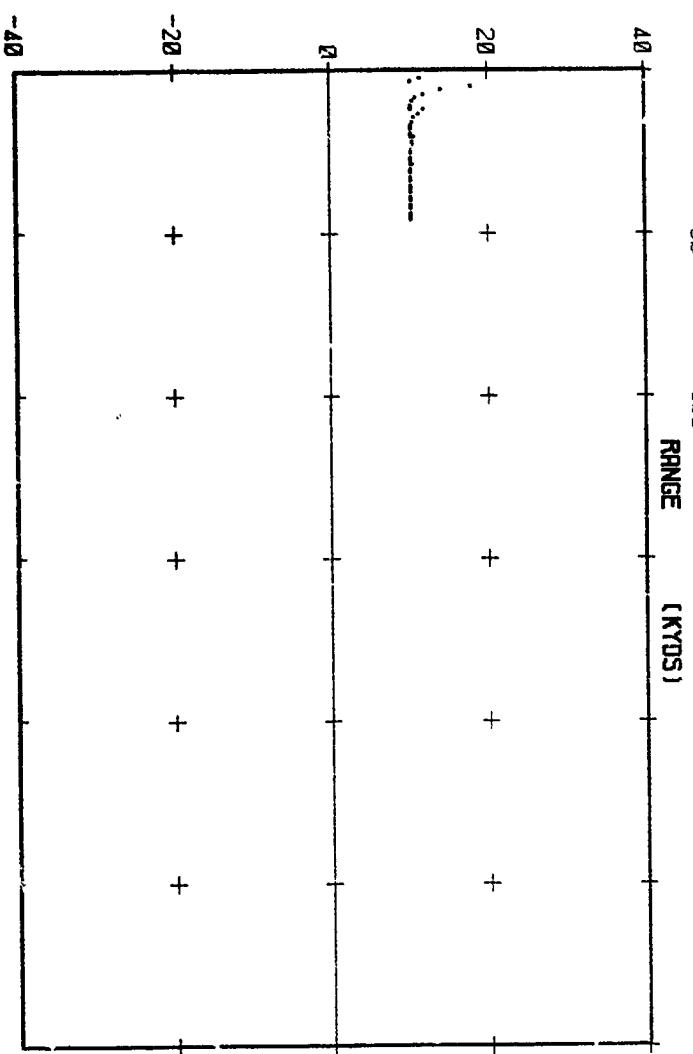
1450 M/S 1500 1550
/ / / /

L.RAPP

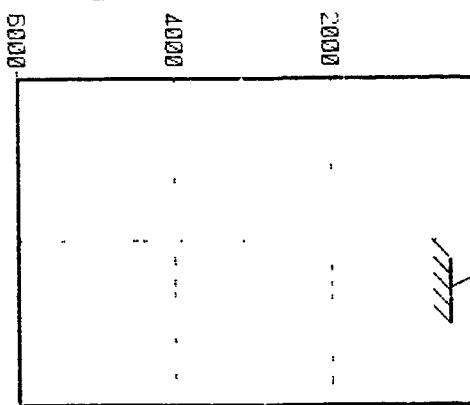
DB LOSS



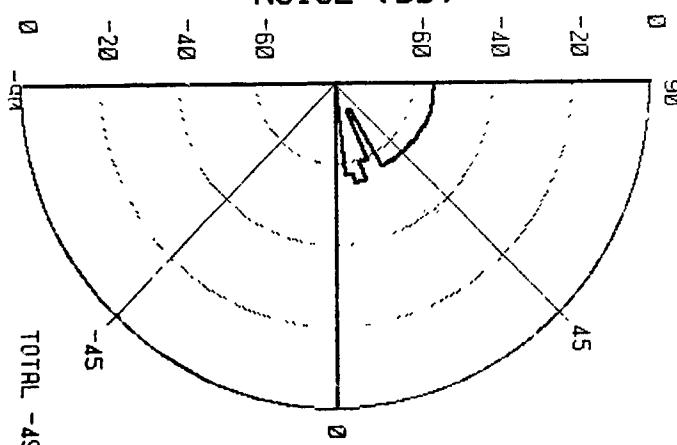
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -49.2 DB

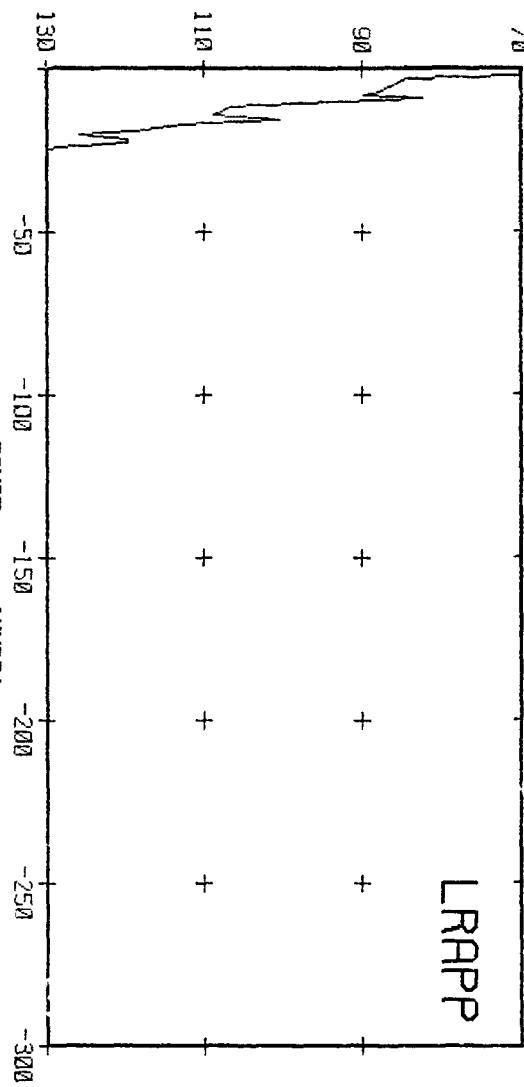
AREA 3A SUMMER

S 50 R 1640 F 2000

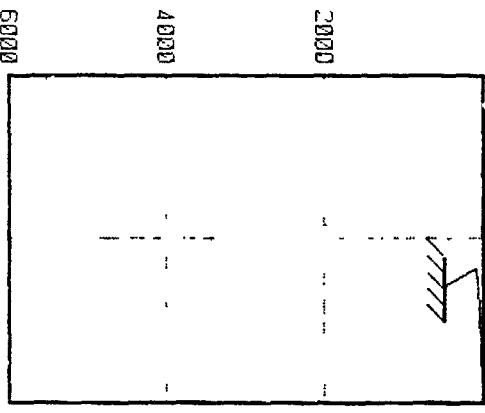
1450 M/S 1500 1550

LRAFP

DB LOSS

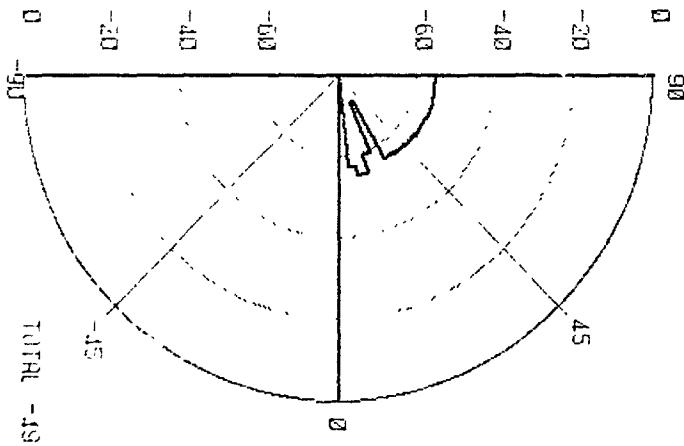
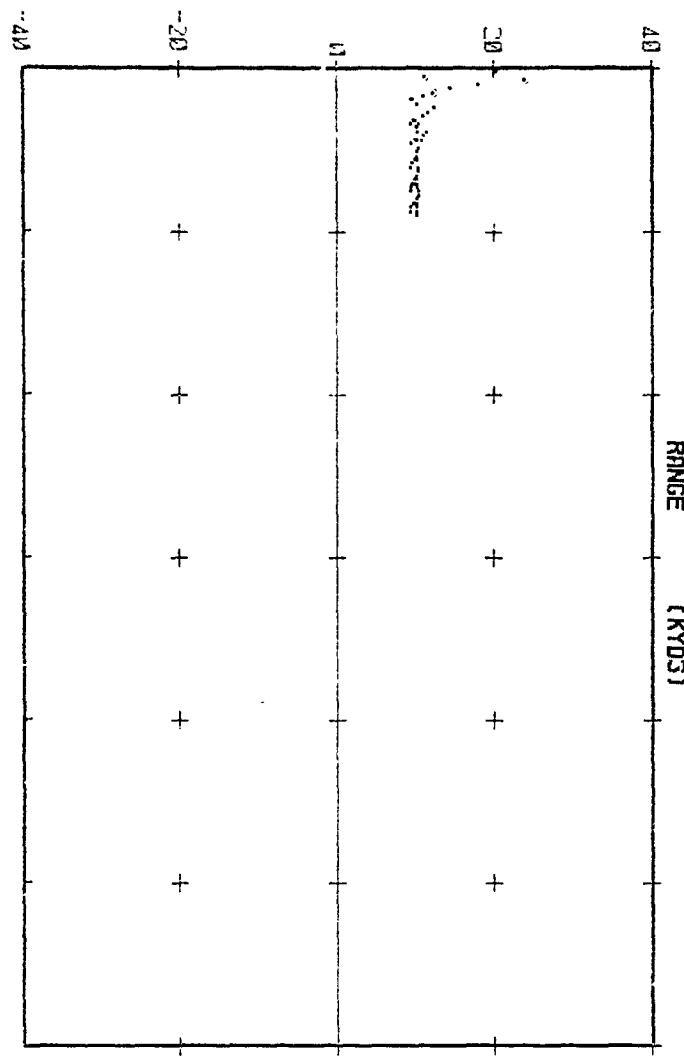


DEPTH IN METERS



NOISE (DB)

ARRIVAL ANGLE



7A

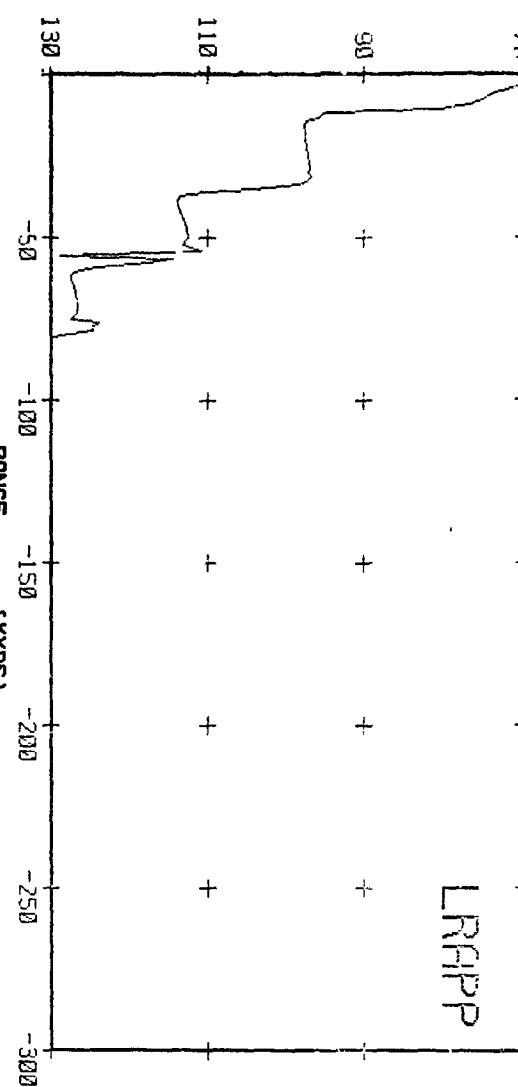
AREA 3A SUMMER

S 253 R 1640 F 7230

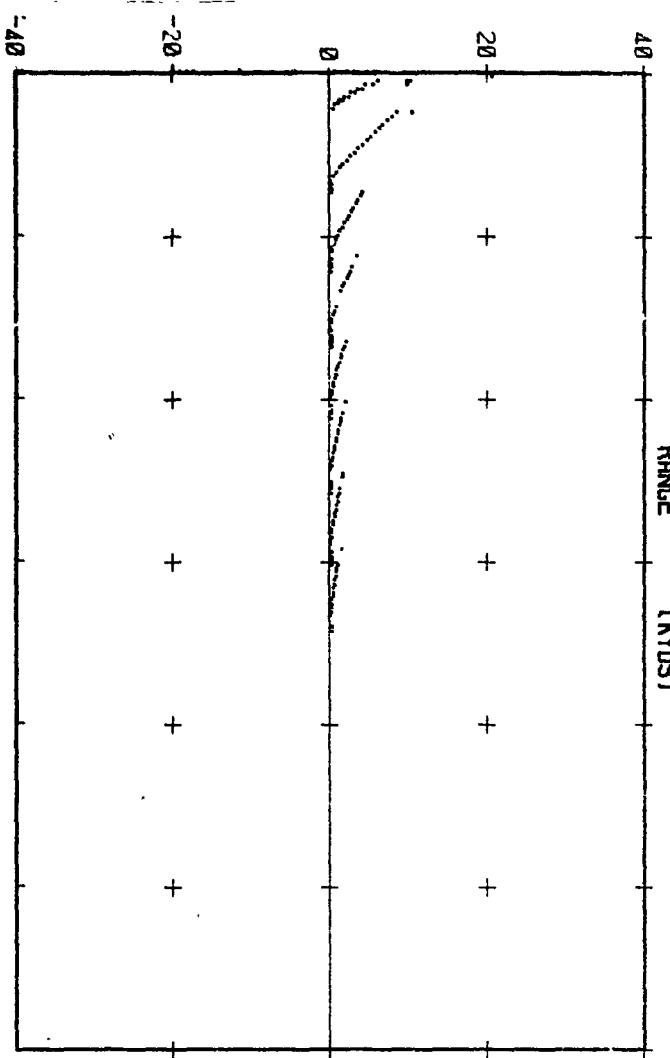
1450 N/S 1500 1550

LRAPP

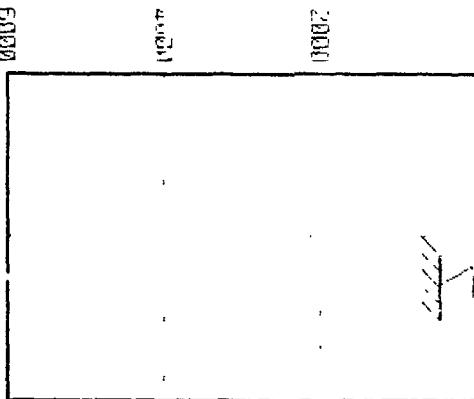
DB LOSS



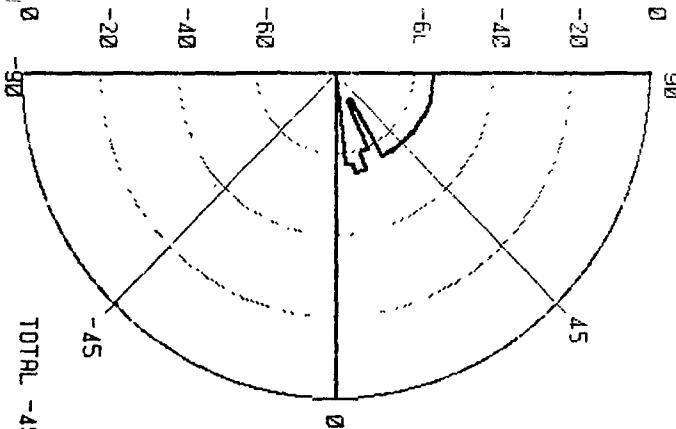
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



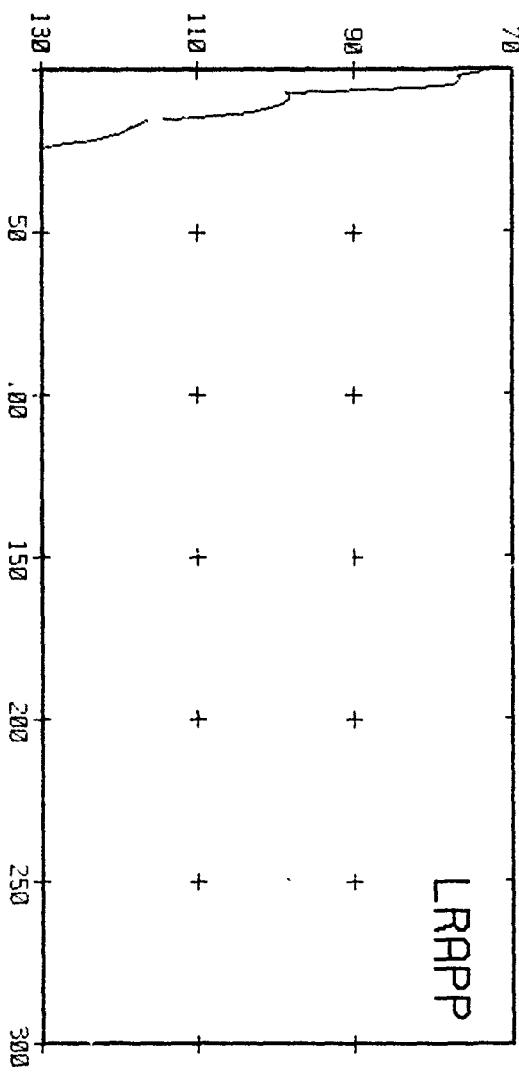
AREA 3A SUMMER

S 28 R 62 F 2500

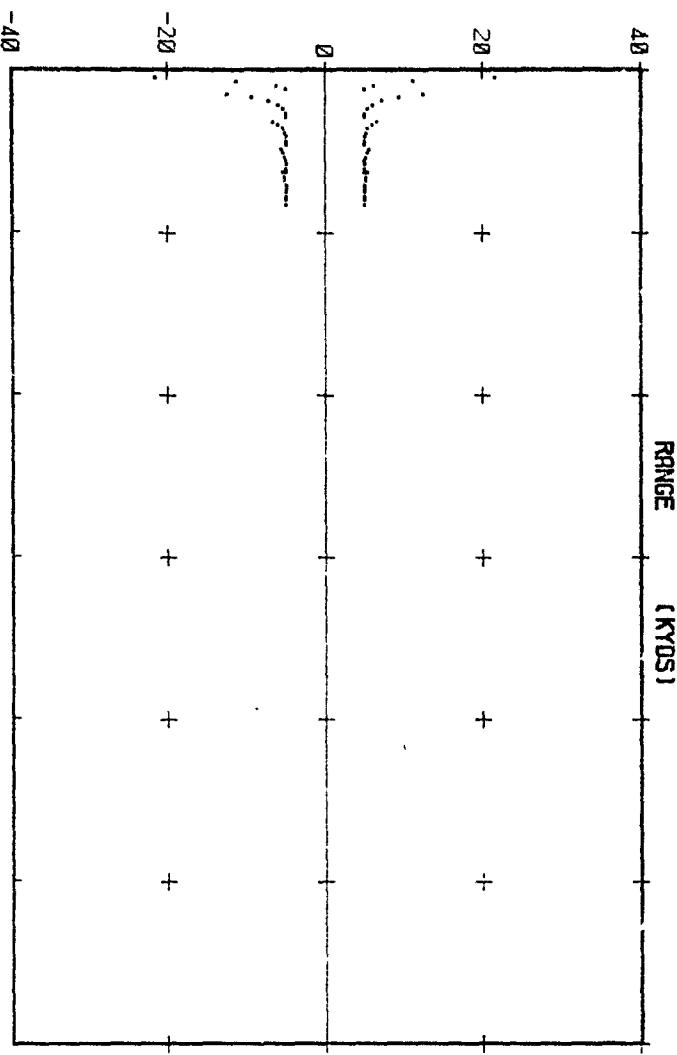
1450 M/S 1500 1550

LRAAPP

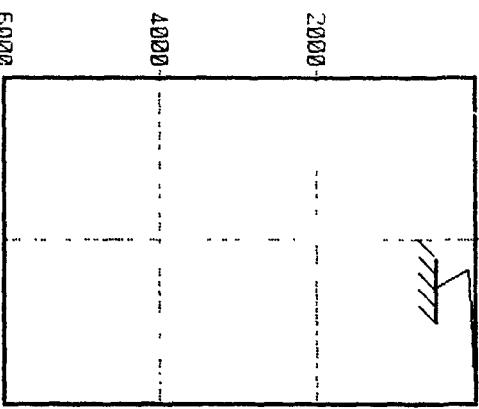
DB LOSS



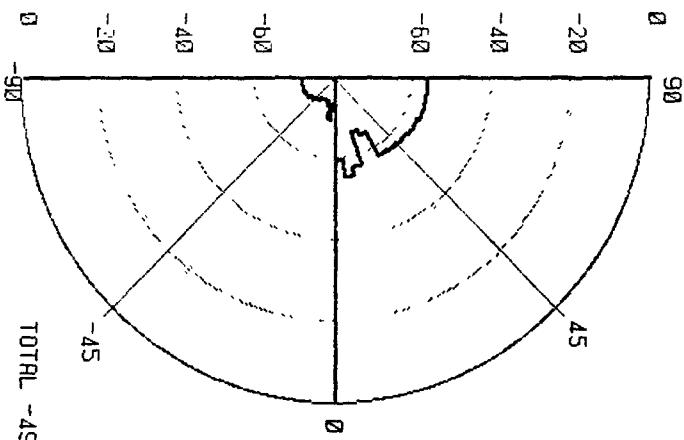
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -49.8 DB

70

ARRER 3A SUMMER

S 50 R 60 F 2500

1450 M/S 1500 1550

LRAPP

DB LOSS

90

+

+

+

+

+

+

+

+

+

130
110
40
-50 -100 -150 -200 -250 -300

RANGE (KIOS)

DEPTH IN METERS

2000

4000

6000

90

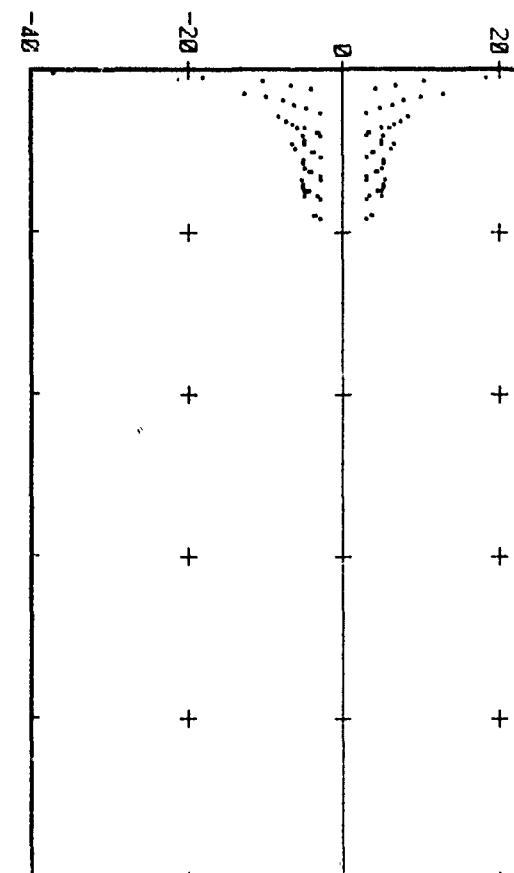
-

-

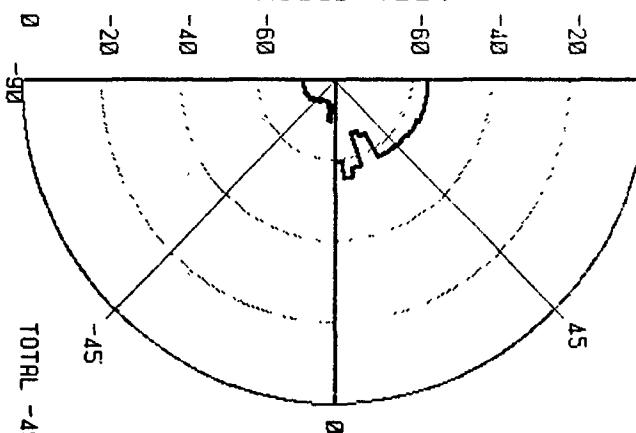
-

-191-

ARRIVAL ANGLE



NOISE (DB)



TOTAL -49.8 DB

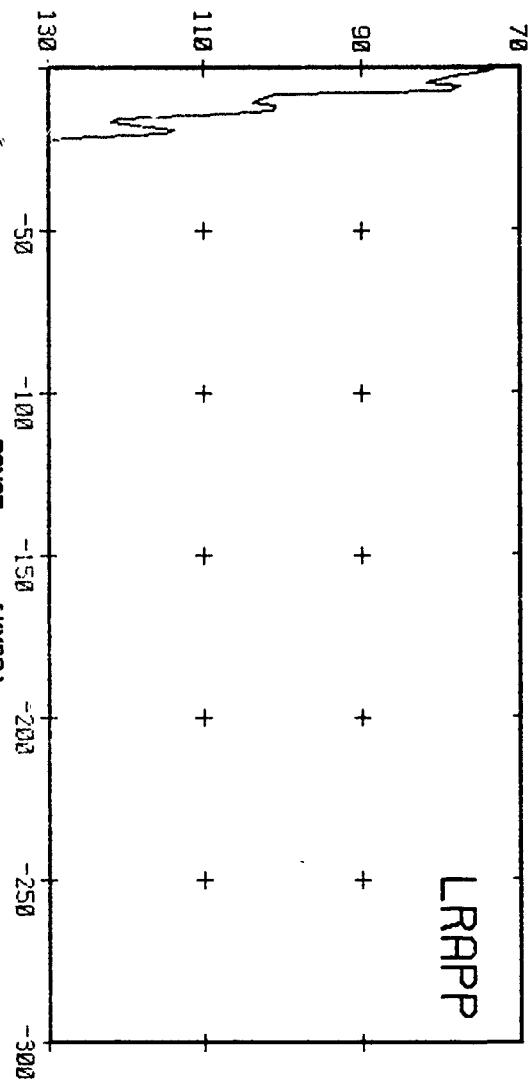
AREA 3A SUMMER

S 233 R 60 F 2500

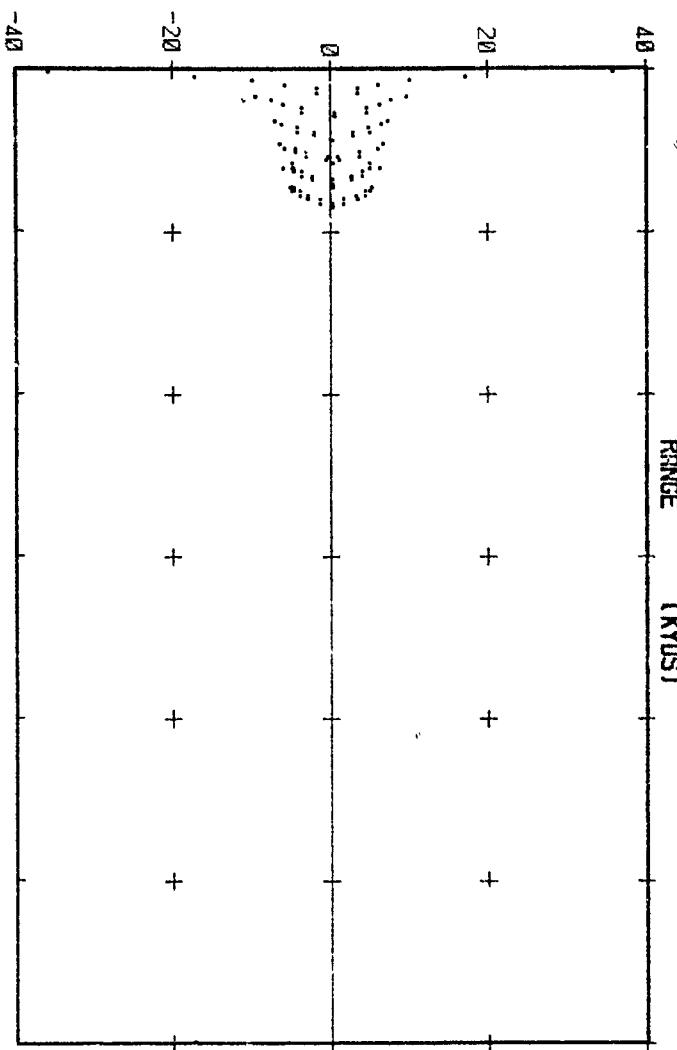
1450 M/S 1500 1550

LRAPP

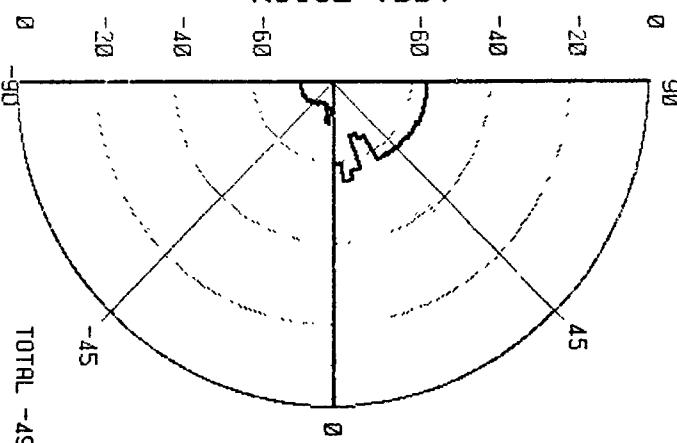
DB LOSS



ARRIVAL ANGLE

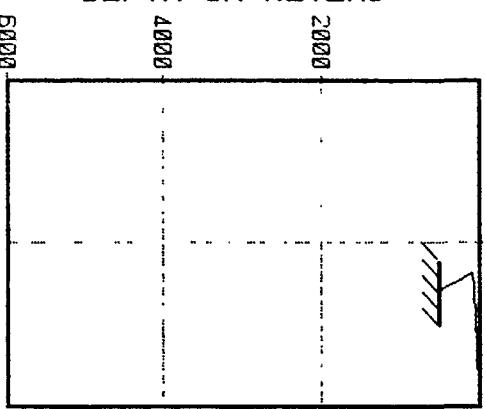


NOISE (DB)



TOTAL -49.8 DB

DEPTH IN METERS



70

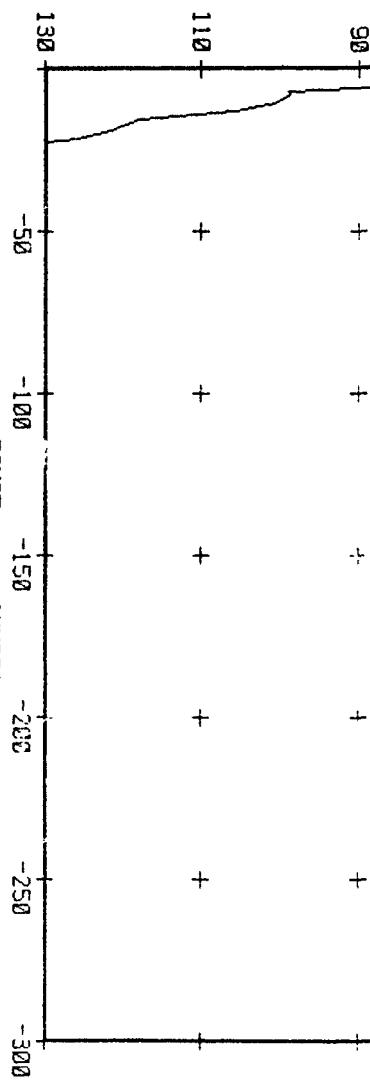
RIVER 3A SUMMER

S 20 R 133 F 2500

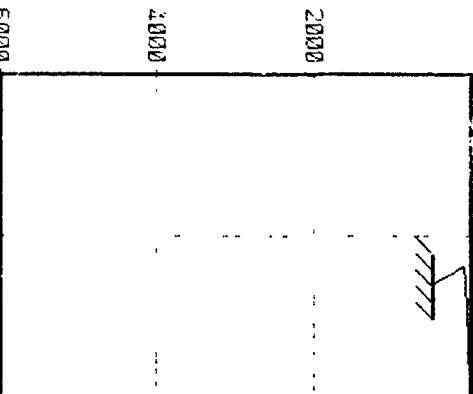
1450 M/S 1500 1550

LRAPP

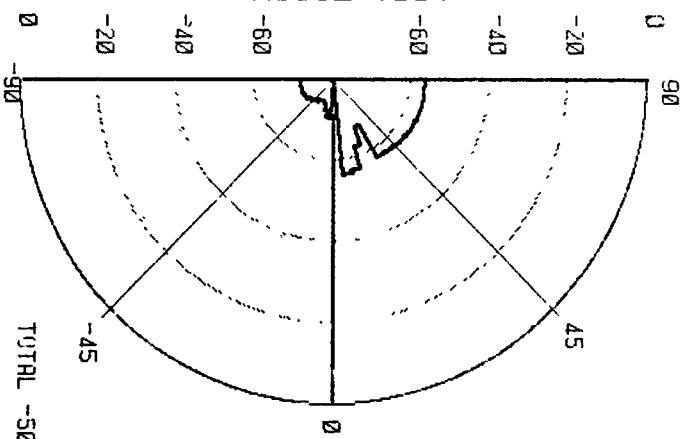
DB LOSS



DEPTH IN METERS



NOISE (DB)



TOTAL -50.2 DB

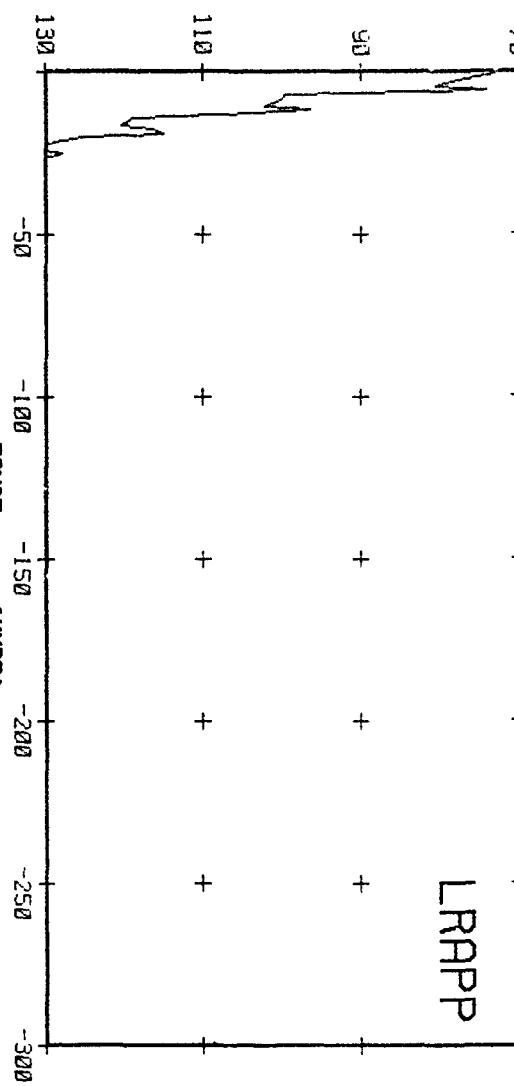
AREA 3A SUMMER

S 50 R 133 F 2500

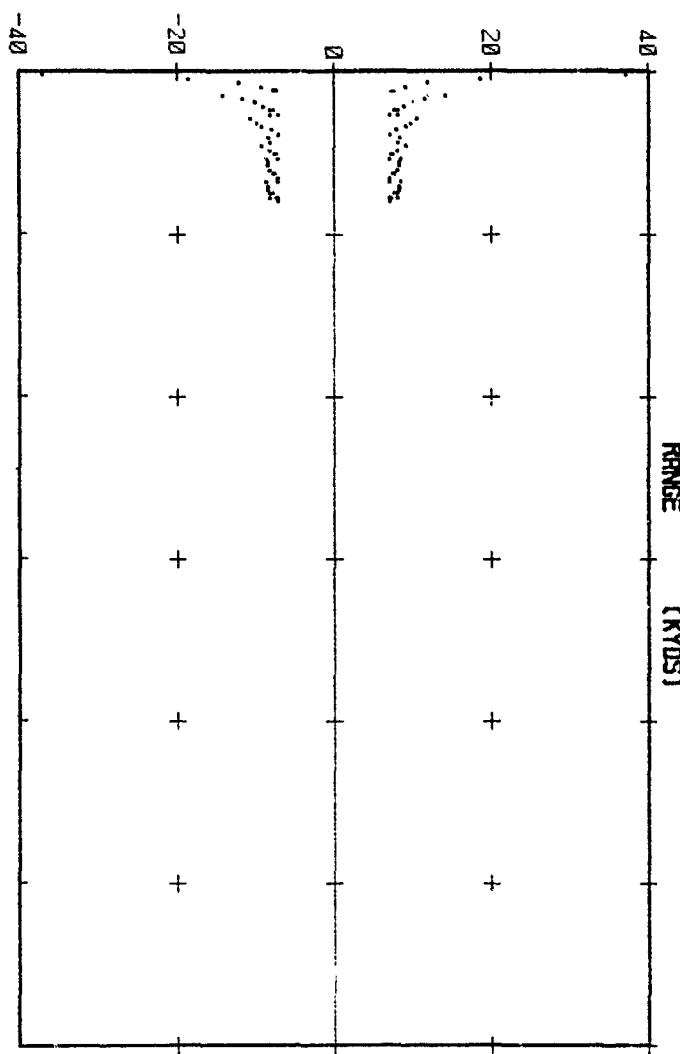
1450 M/S 1500 1550

L RAPP

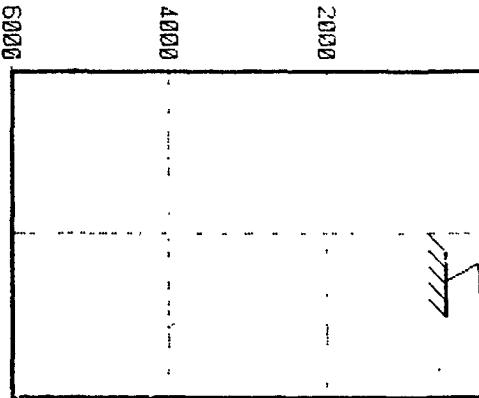
DB LOSS



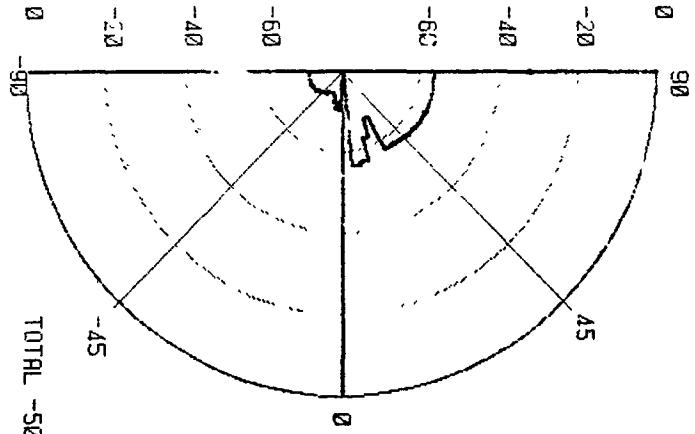
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



70

AREA 3A SUMMER

S 233 R 133 F 2500

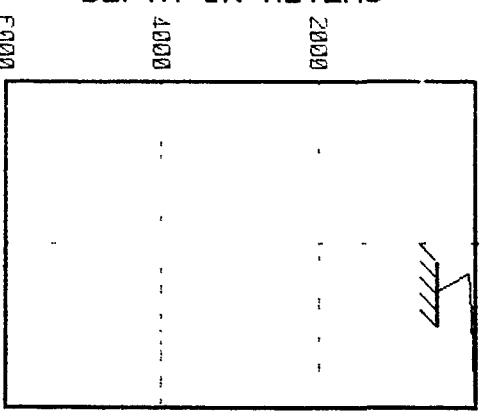
1450 M/S 1500 1550

LRAPP

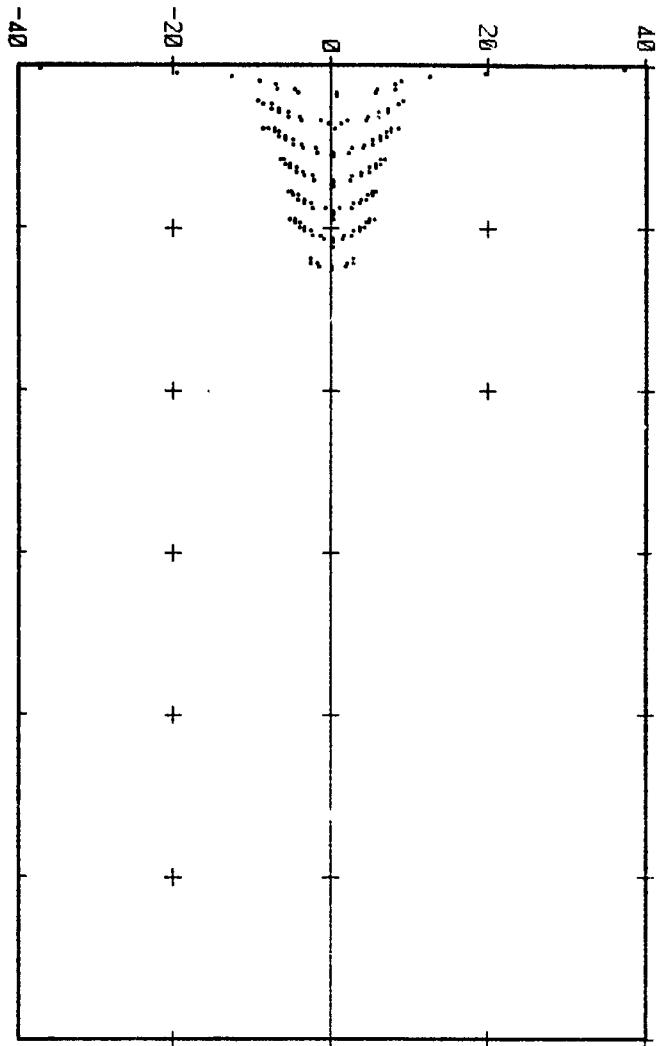
DB LOSS



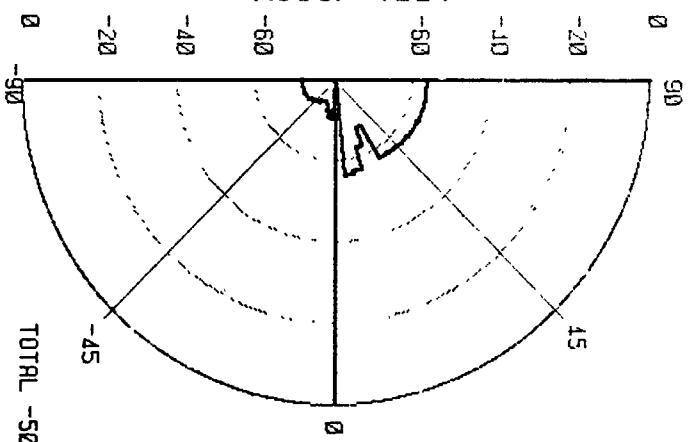
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)



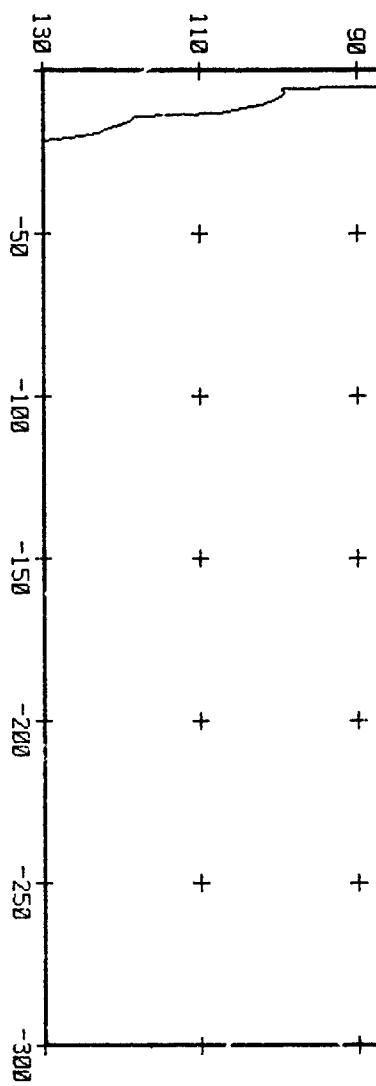
RER 3R SUMMER

S 20 R 262 F 2500

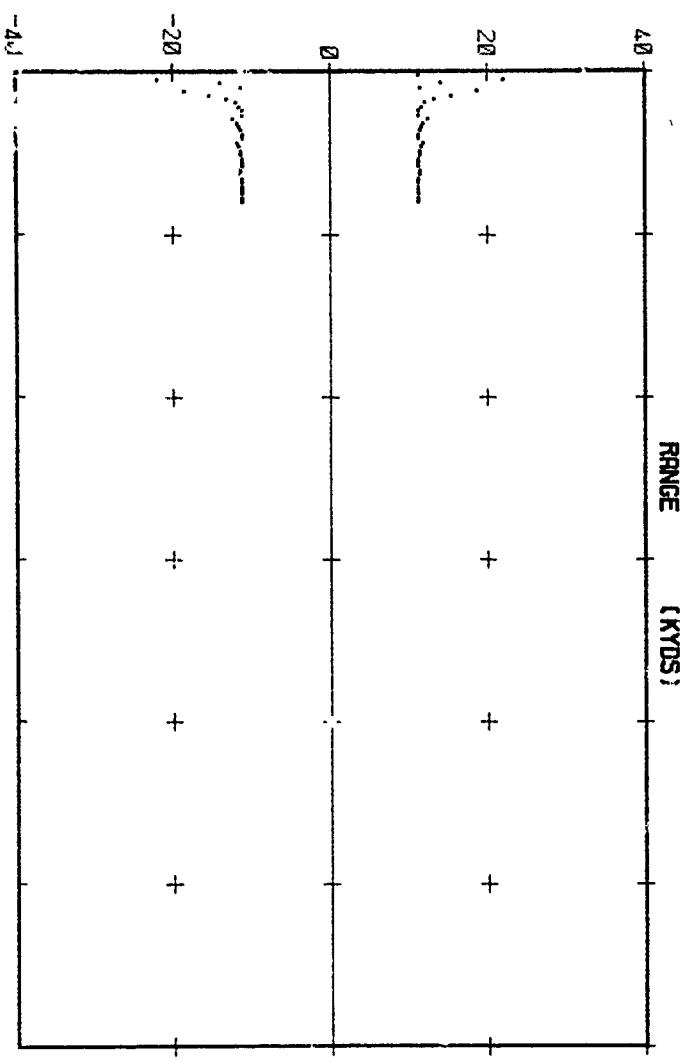
1450 M/S 1520 1550

LRRAPP

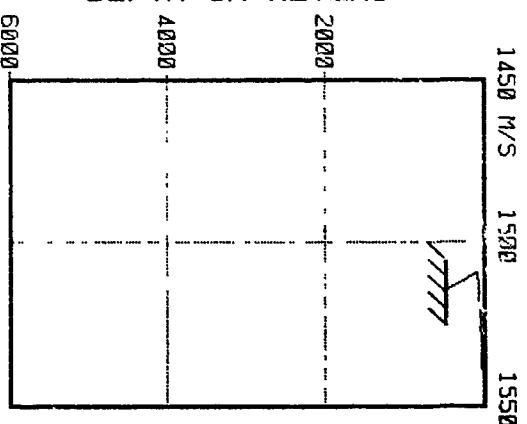
DB LOSS



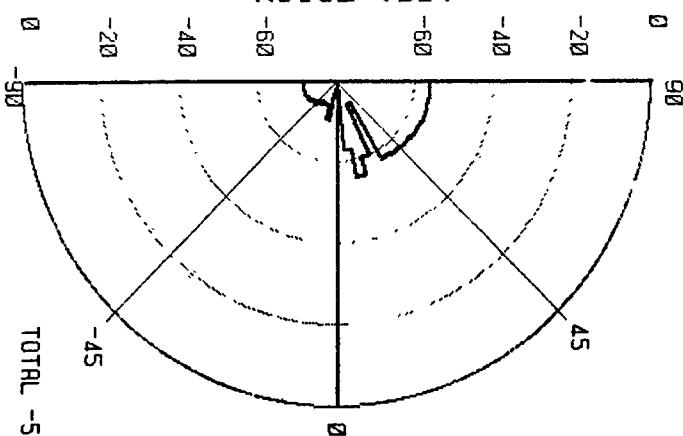
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -50.4 DB

70

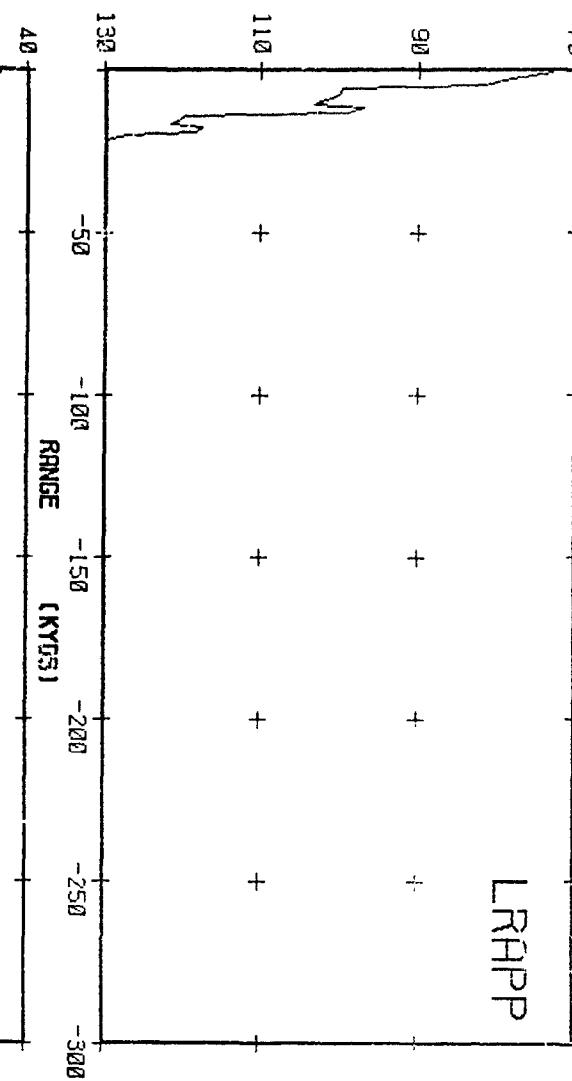
AREA 3A SUMMER

S 50 R 262 F 2560

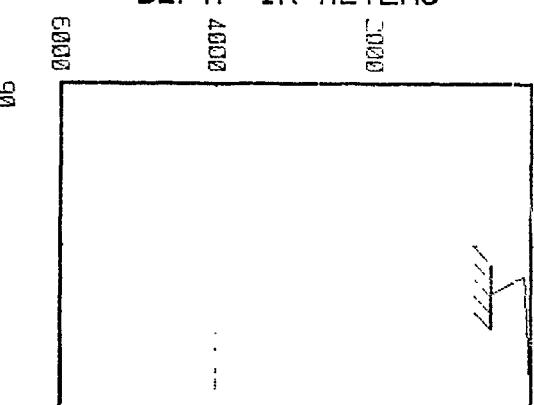
1450 11/5 1500 1550

LRHAPP

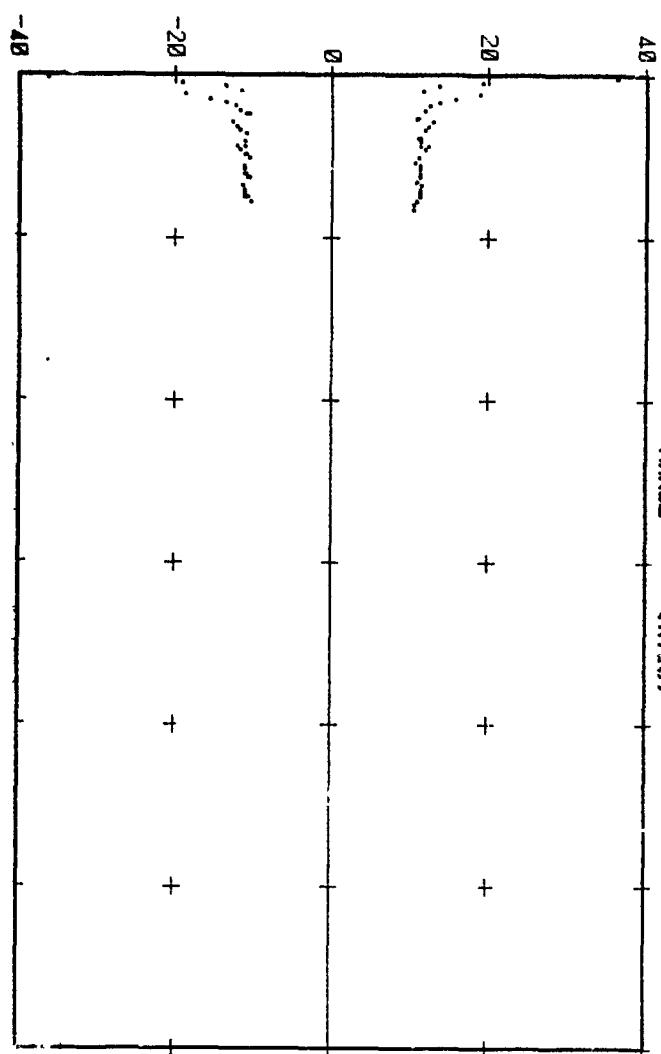
DB LOSS



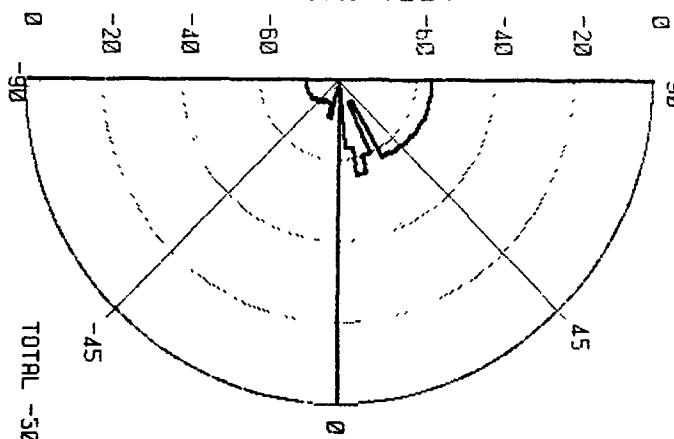
DEPTH IN METERS



ARRIVAL ANGLE

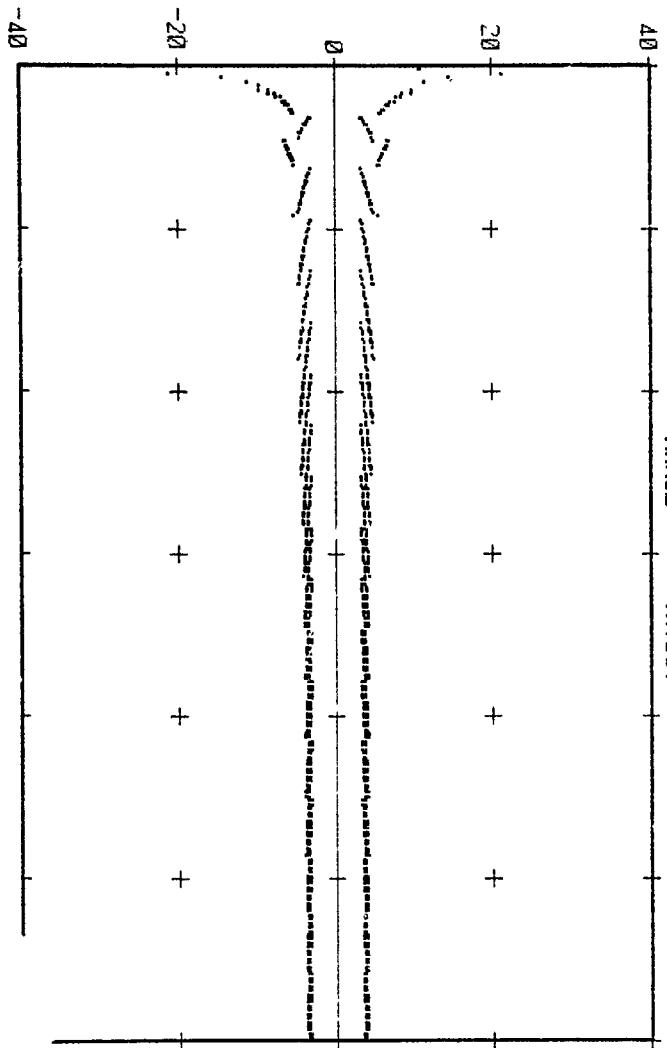


NOISE (DB)

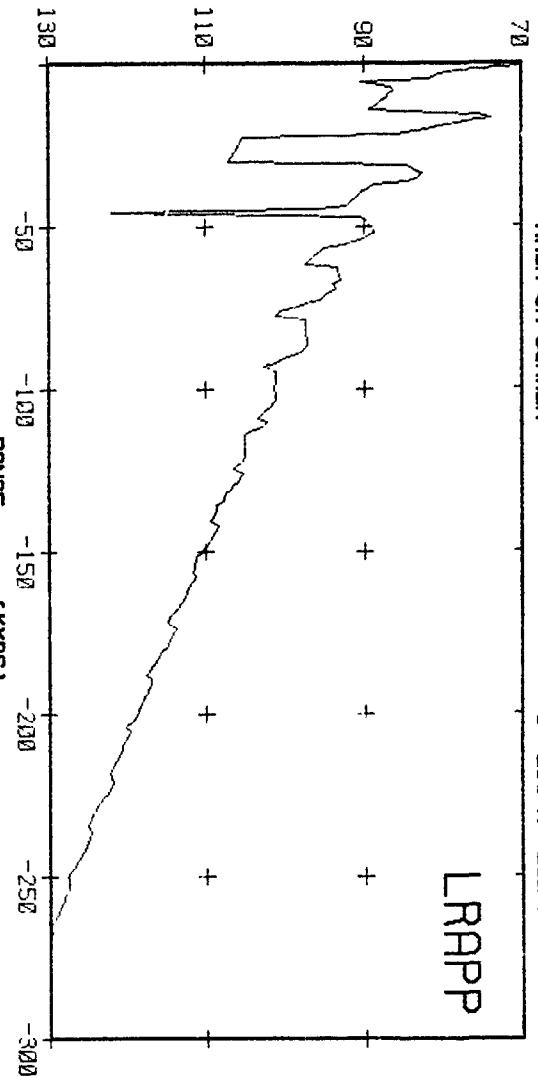


TOTAL -50.4 DB

ARRIVAL ANGLE



DB LOSS



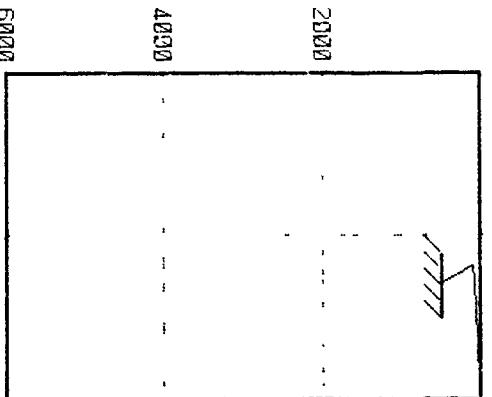
L RAPP

AREA 3A SUMMER

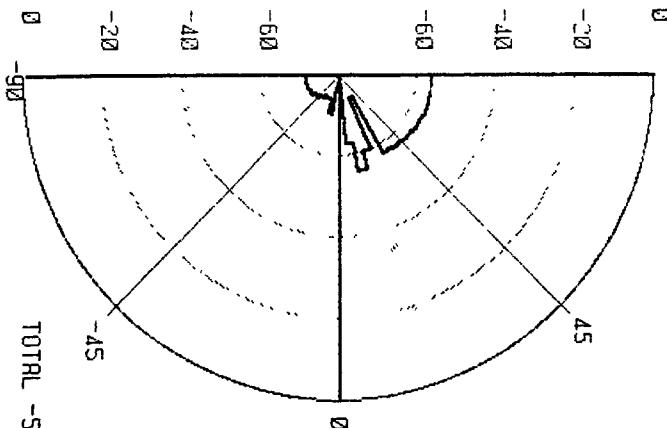
S 233 R 262 F 2500

1450 M/S 1500 1550

DEPTH IN METERS



NOISE (DB)



TOTAL -50.4 DB

70

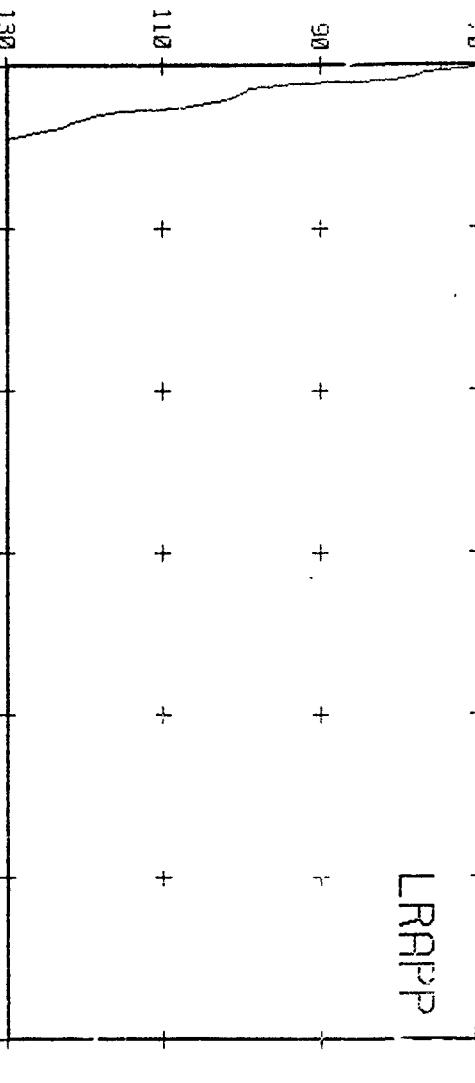
ARRH 3A SURVEY

S 20 R 30 F 2530

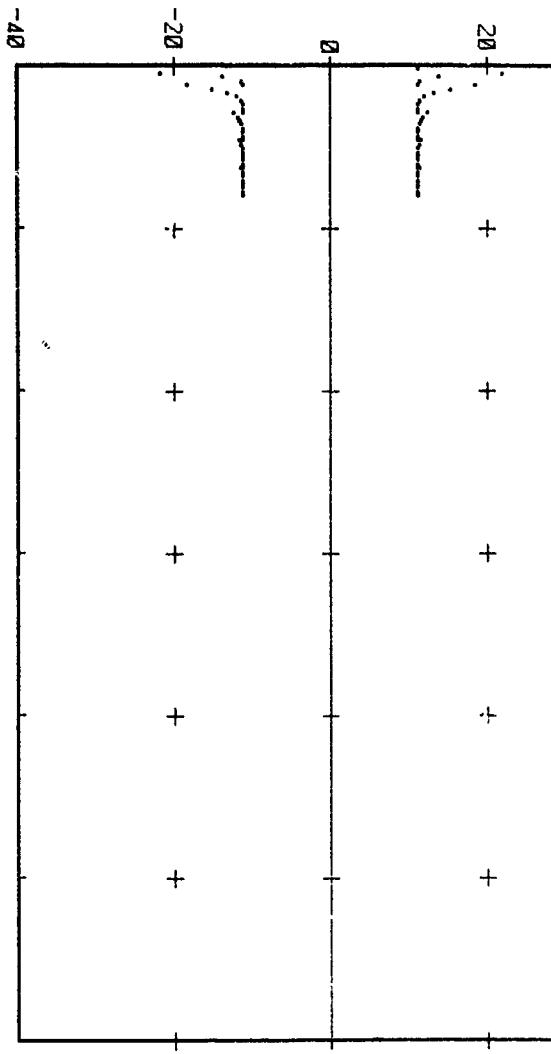
1450 M/S 1500 1550

LRAFP

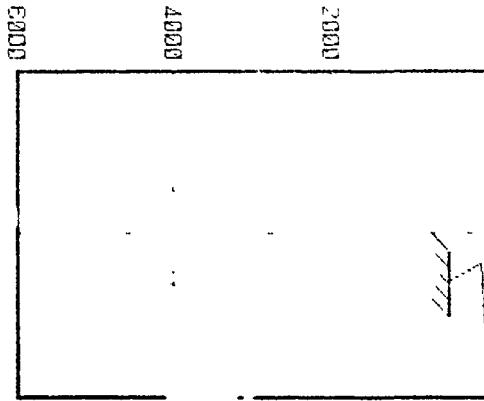
DB LOSS



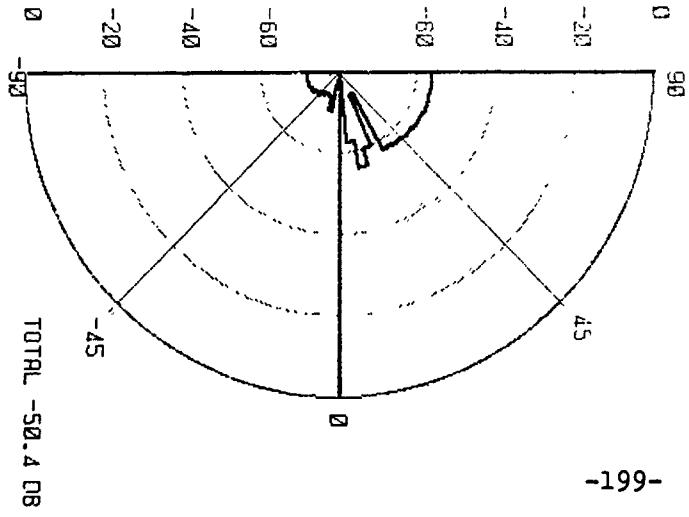
ARRIVAL ANGLE

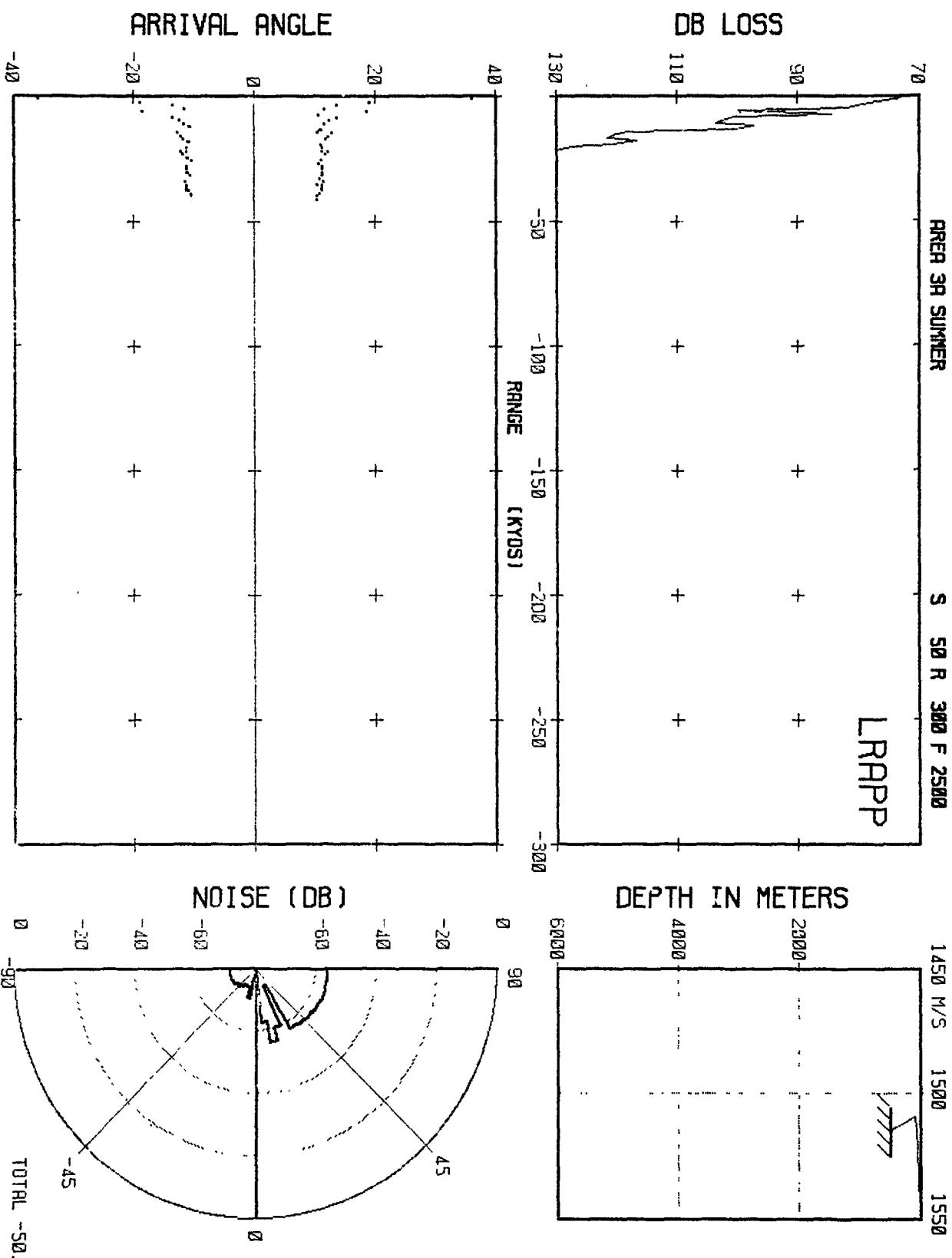


DEPTH IN METERS



NOISE (DB)





70

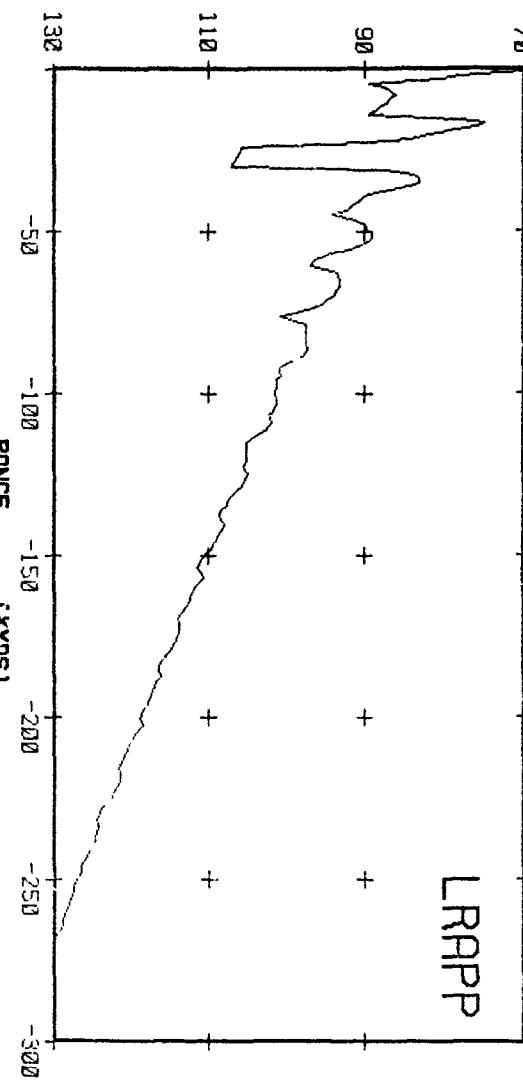
AREA 3A SUMMER

S 233 R 300 F 2500

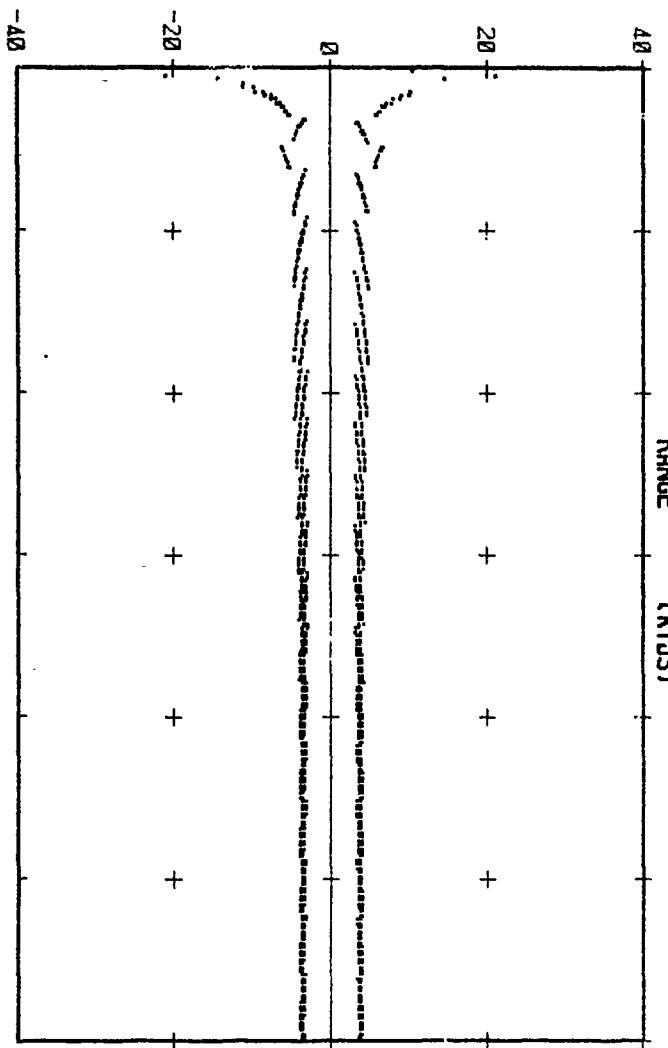
1450 M/S 1500 1550

LRAPP

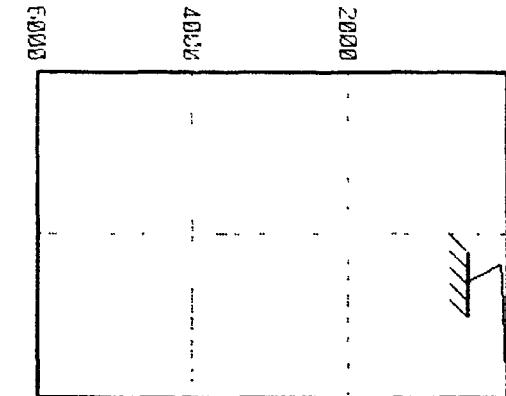
DB LOSS



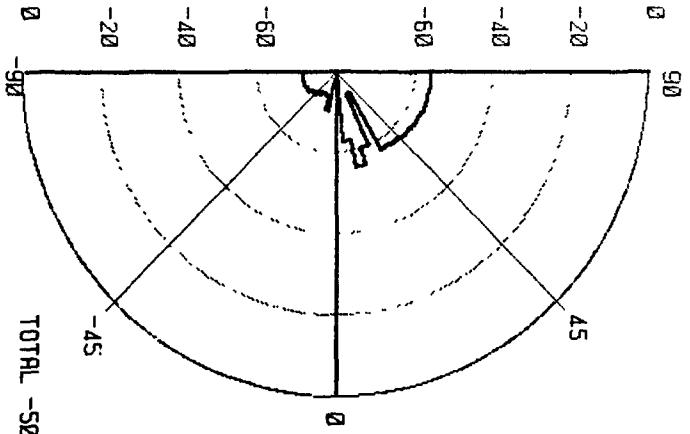
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -50.4 DB

70

AREA 3A SUMMER

S 20 R 1000 F 2500

1450 M/S 1500 1550

LRAPP

DB LOSS

90
110
130
+ + + + + + + + + +

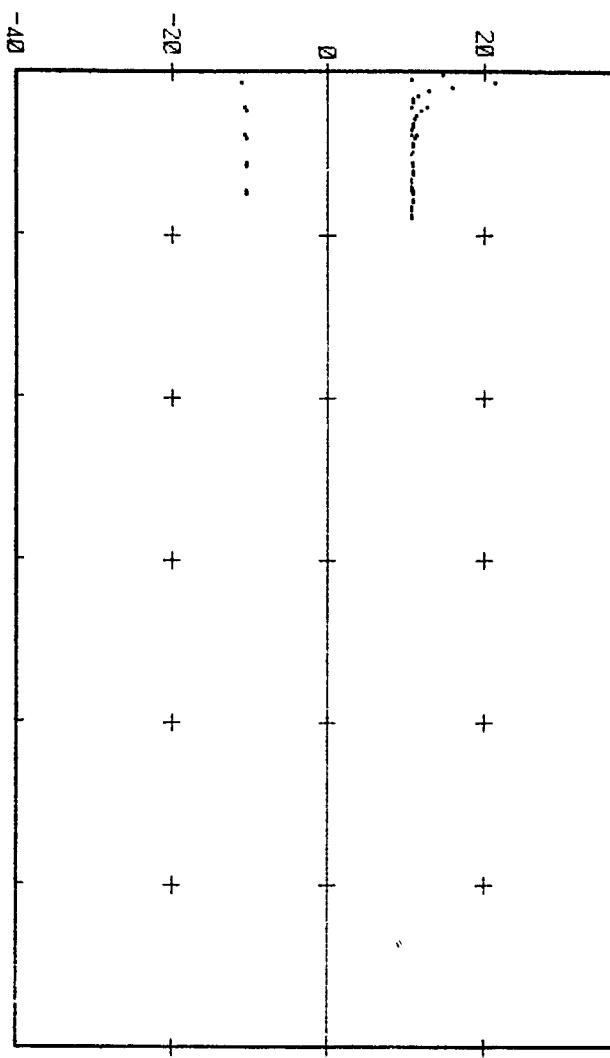
-50 -100 -150 -200 -250 -300

RANGE (KYDS)

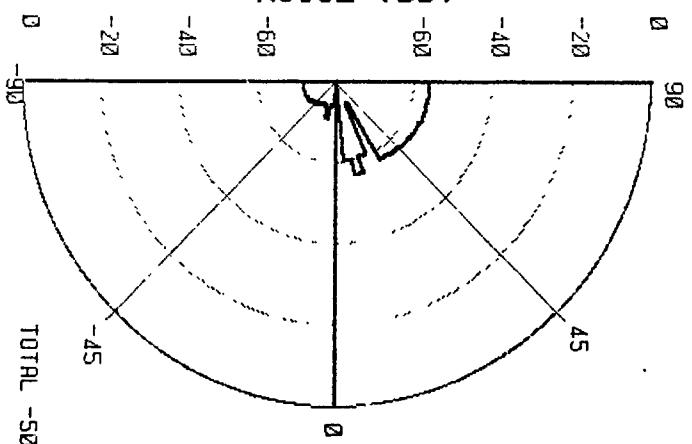
DEPTH IN METERS

2000
4000
6000

ARRIVAL ANGLE



NOISE (DB)



TOTAL -50.5 DS

70

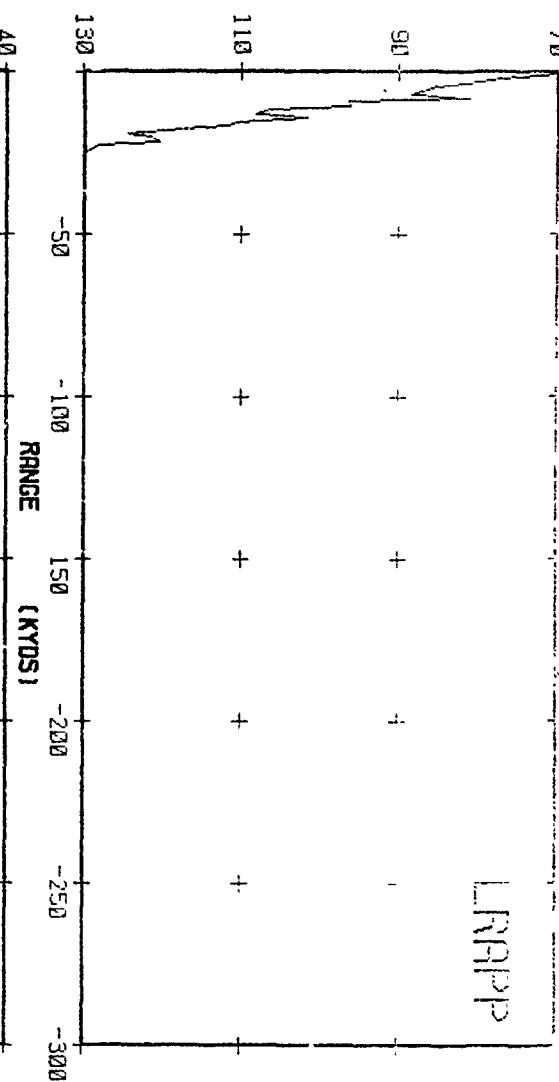
FREQUENCIES

S 50 R 1000 F 2500

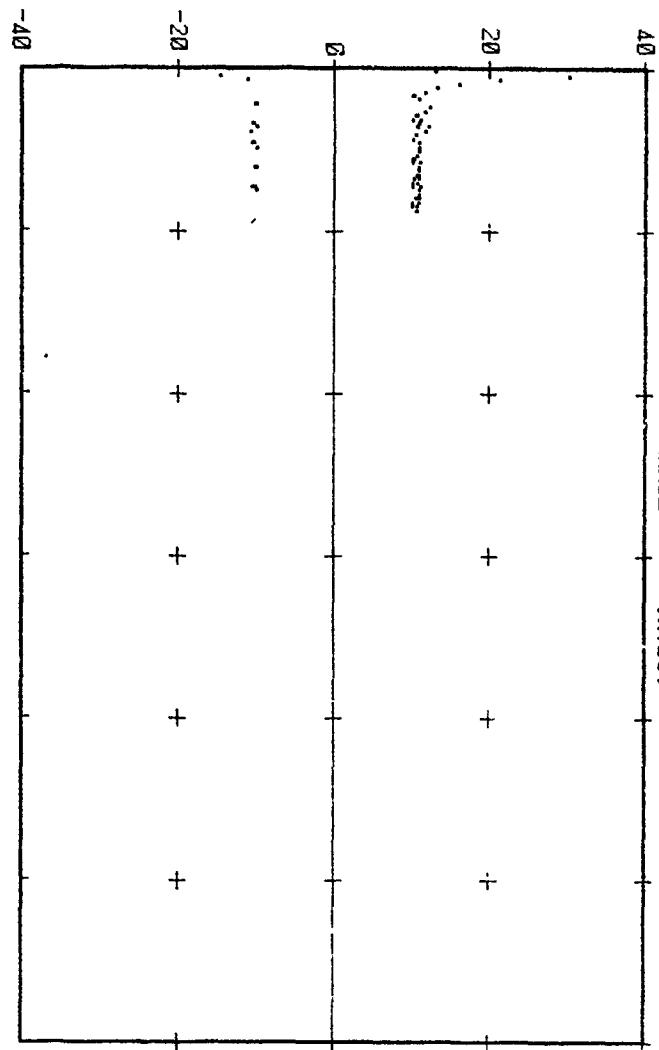
1450 Hz 1500 1550

LRRP

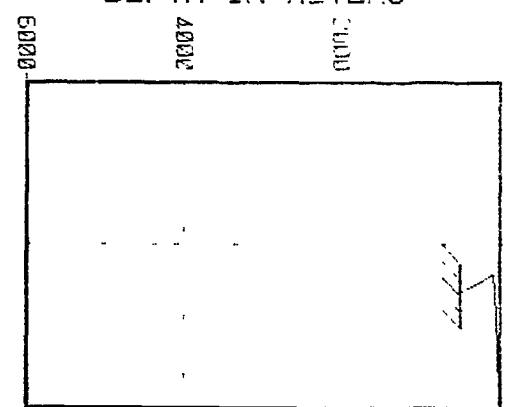
DB LOSS



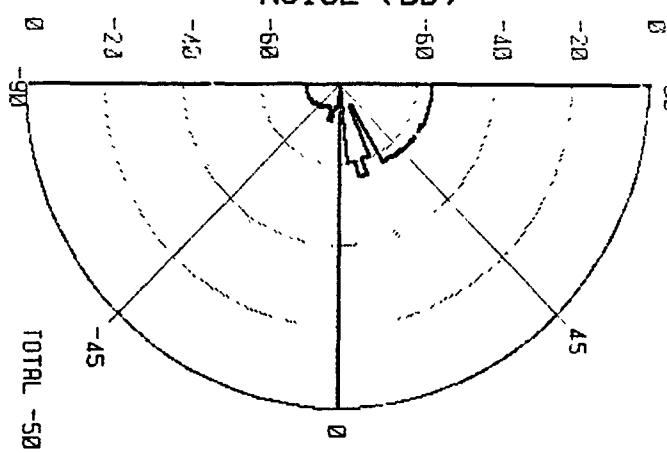
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

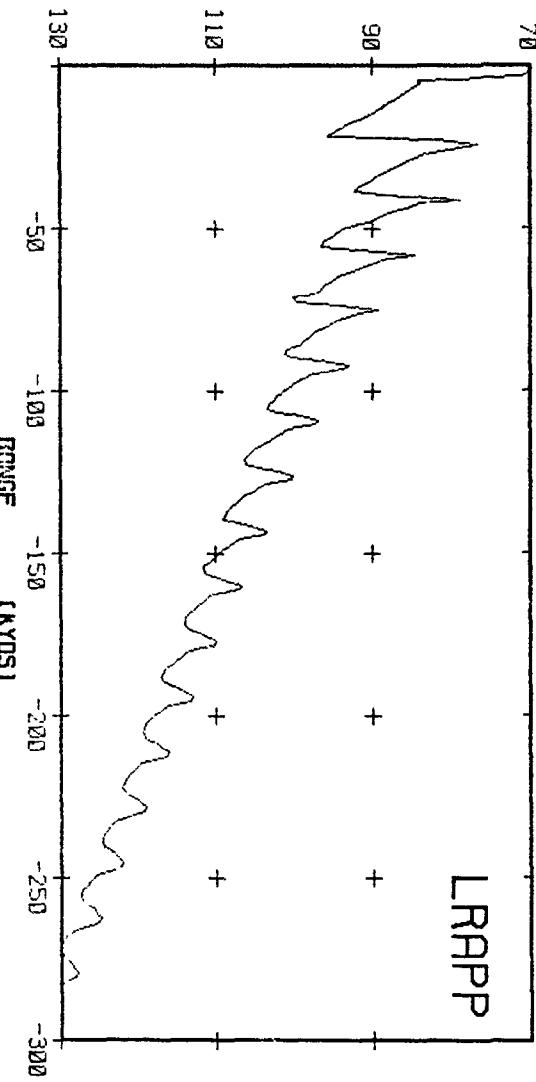


AREA 3A SUMMER

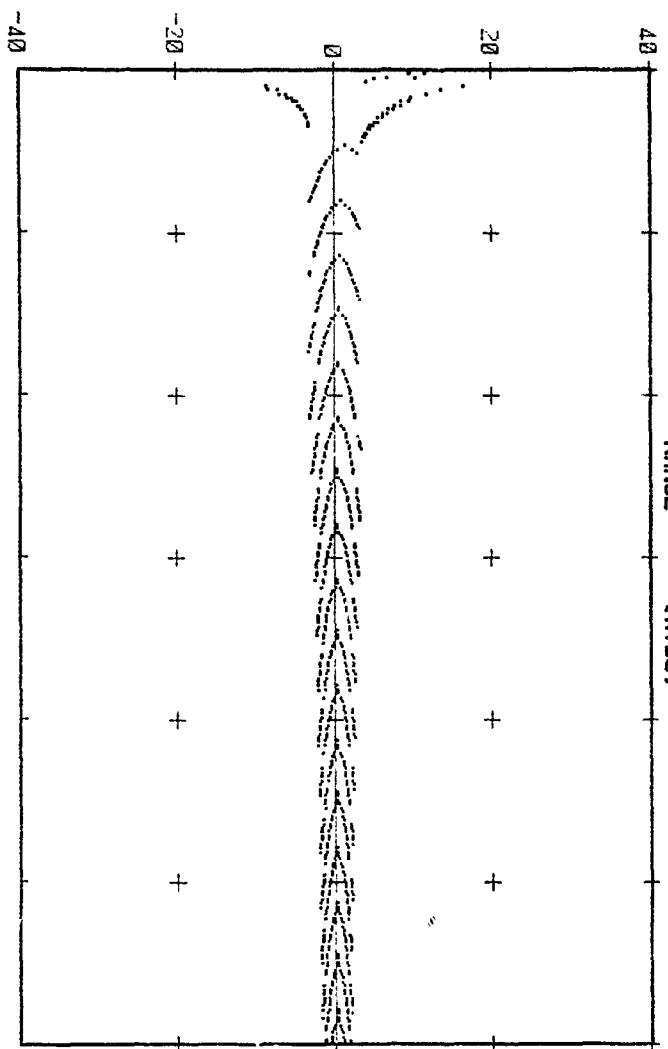
S 233 R 1000 F 2500

1450 M/S 1500 1550

DB LOSS

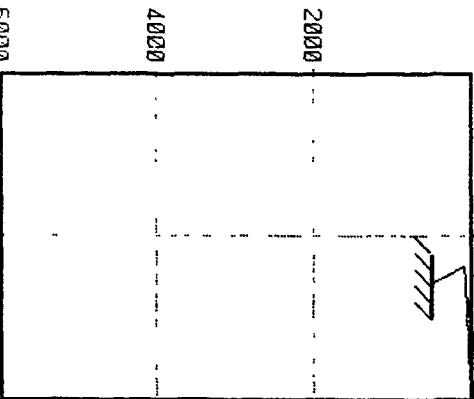


ARRIVAL ANGLE

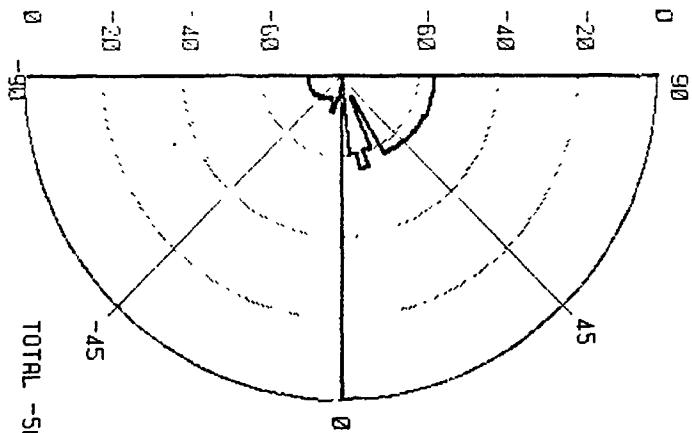


LRRAPP

DEPTH IN METERS



NOISE (DB)



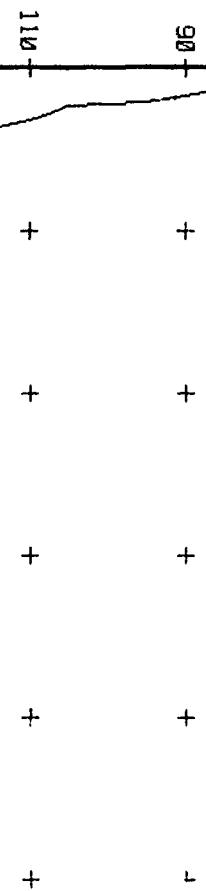
TOTAL -50.5 DB

RER 3A SUMMER S 20 R 1500 F 2500

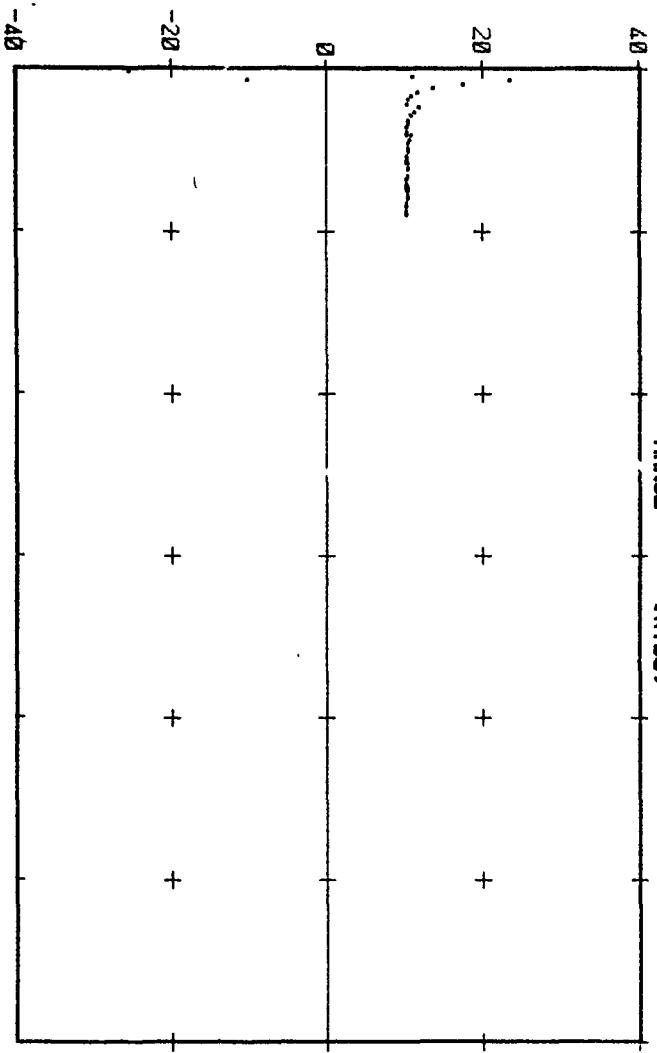
1450 M/S 1500 1550

LRAFP

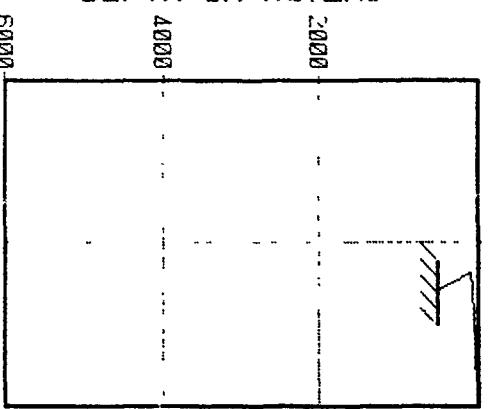
DB LOSS



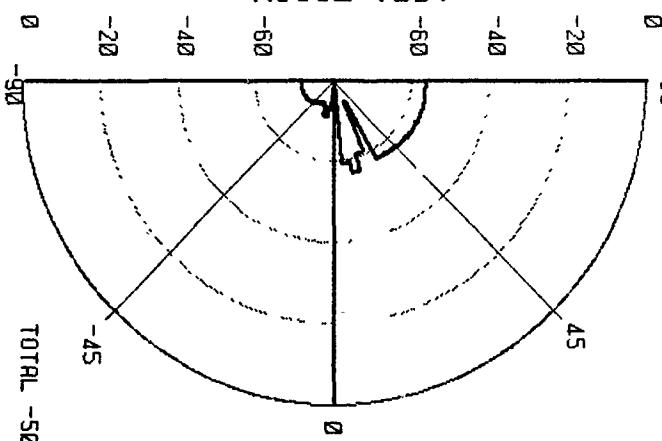
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

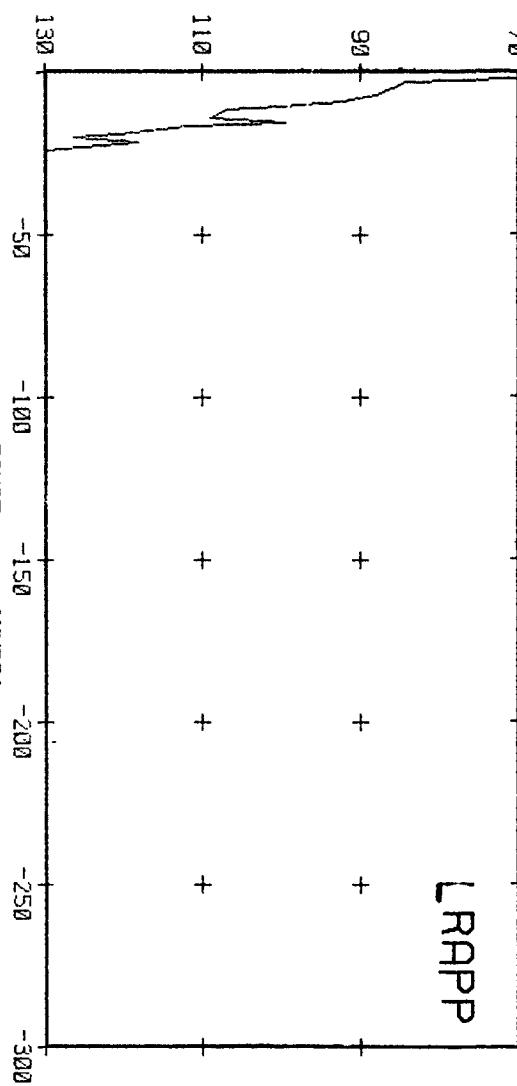


ARR 3A SUMMER S 50 R 1500 F 2500

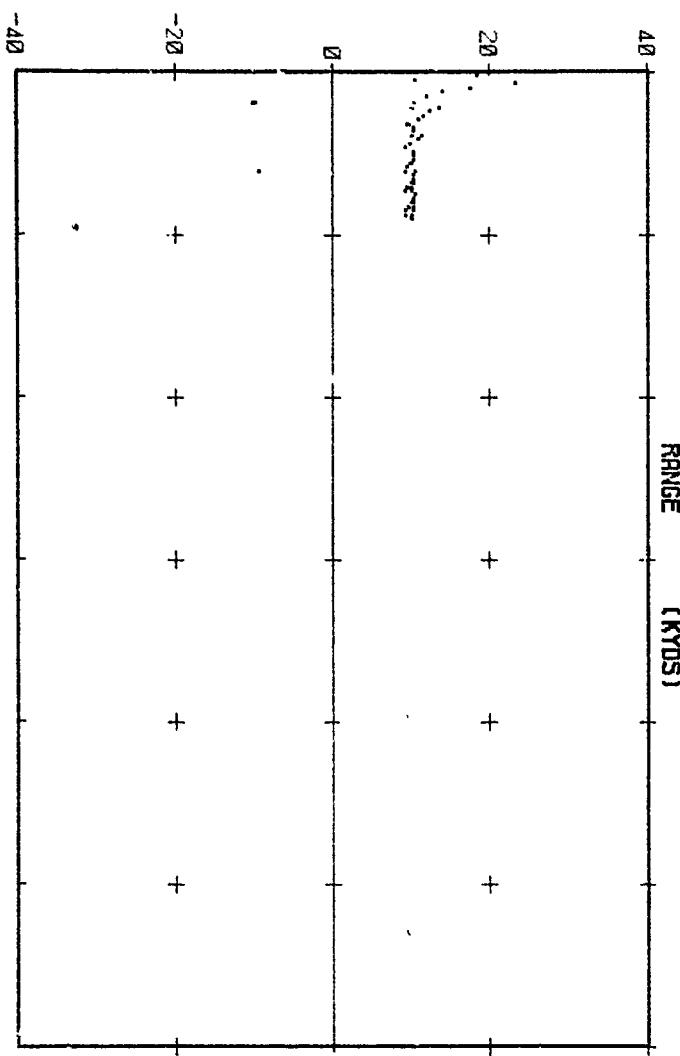
1450 M/S 1500 1550

L RAPP

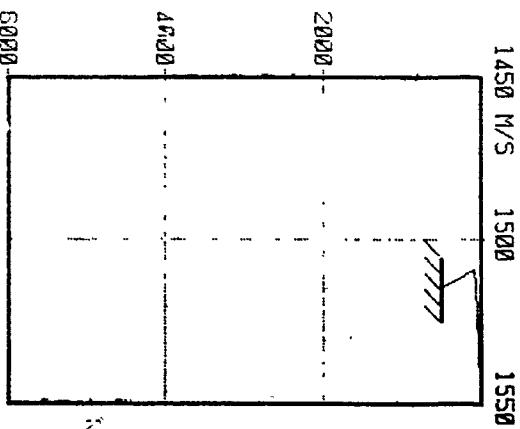
DB LOSS



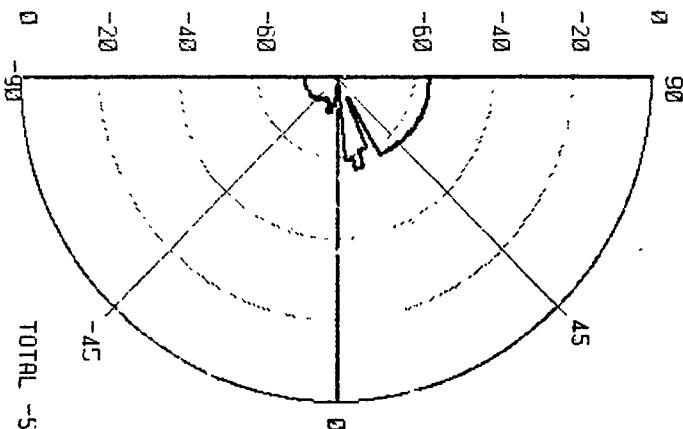
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



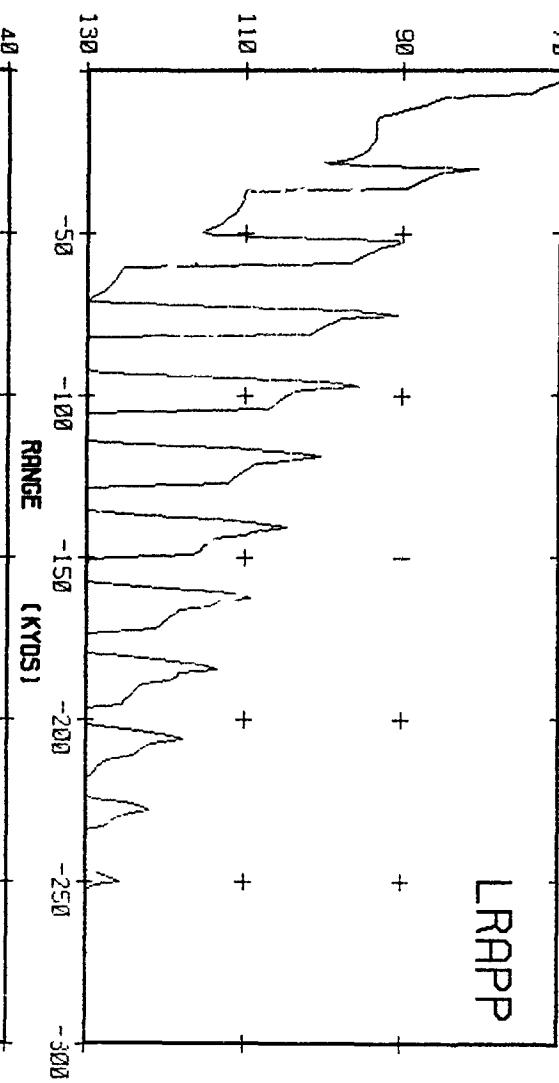
AREA 3A SUMMER

S 233 R 1500 F 2500

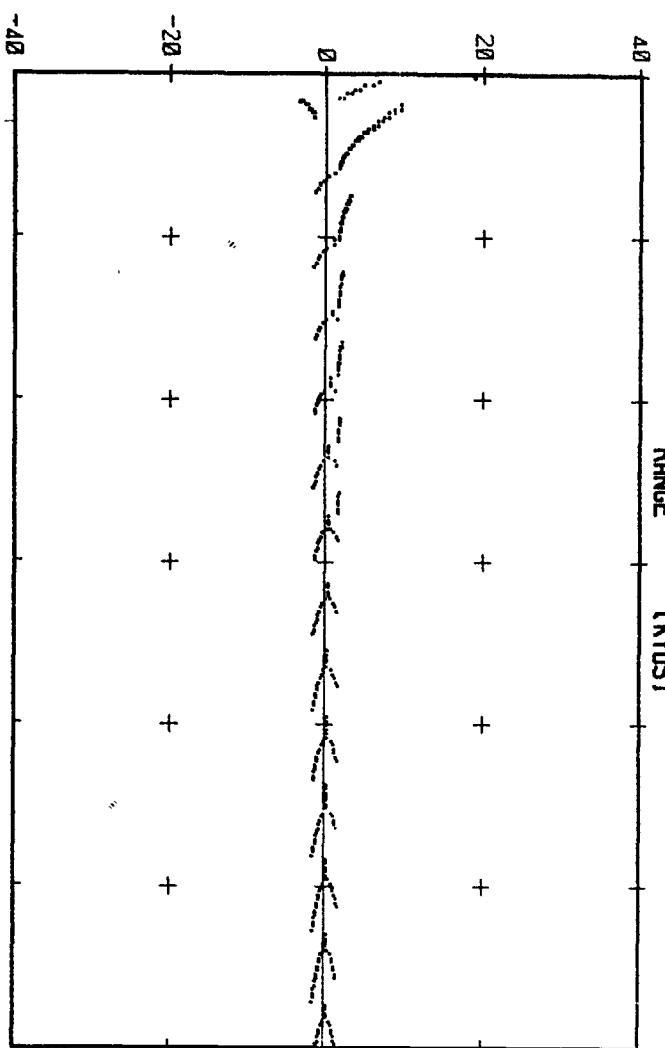
1450 M/S 1500 1550

LRAPP

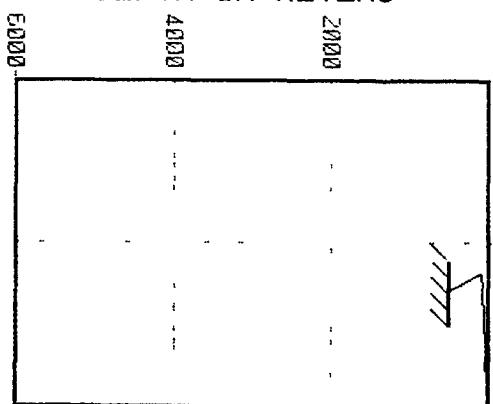
DB LOSS



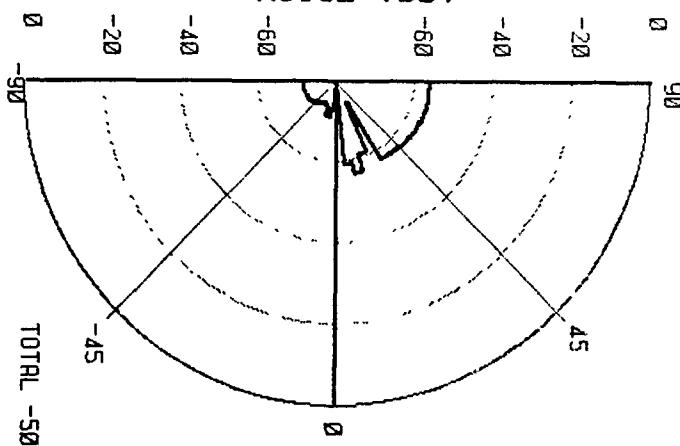
ARRIVAL ANGLE



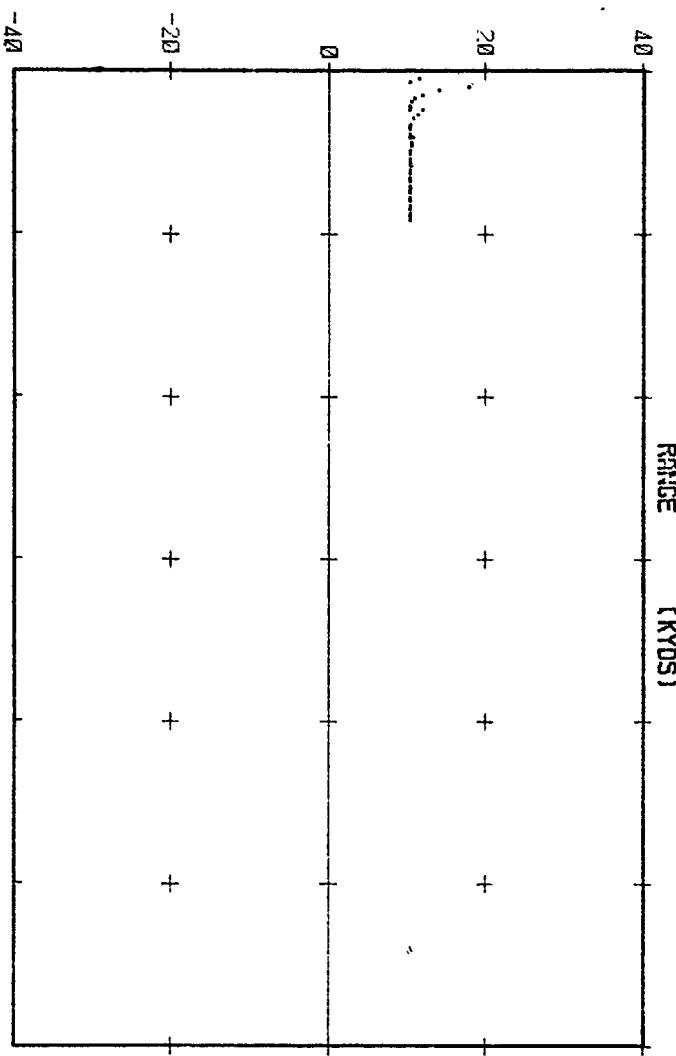
DEPTH IN METERS



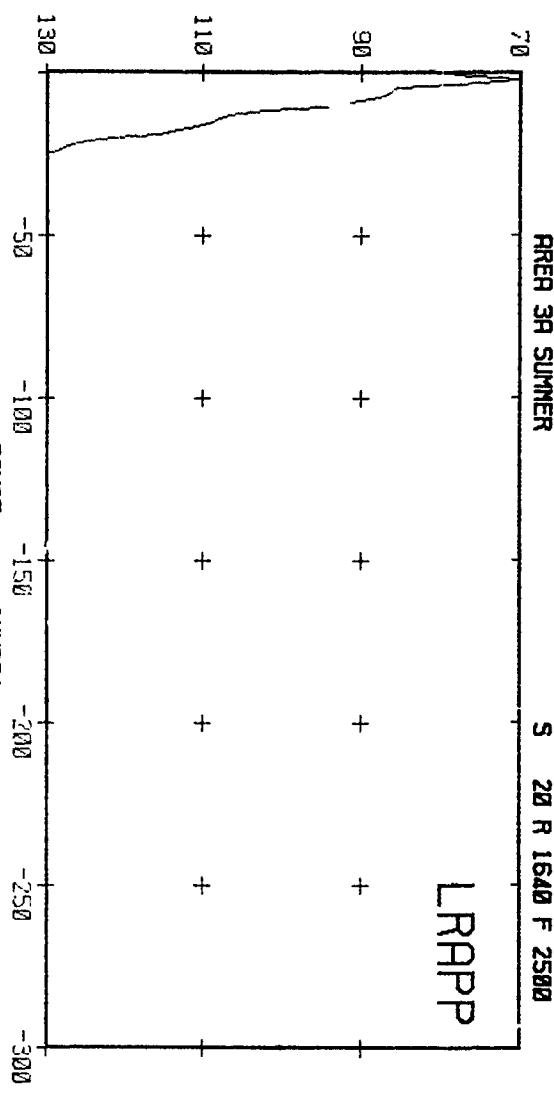
NOISE (DB)



ARRIVAL ANGLE



DB LOSS

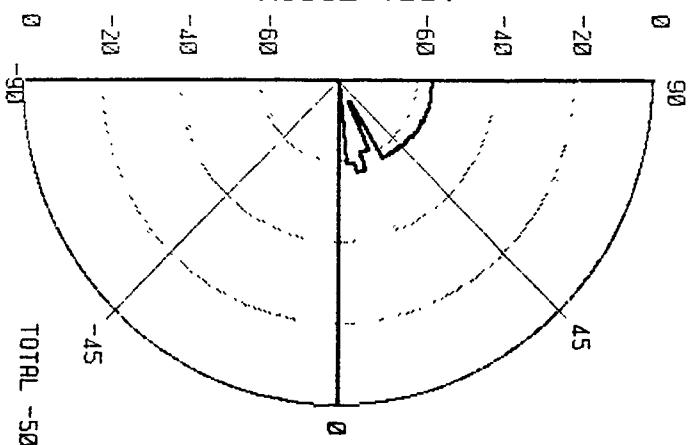


L RAPP

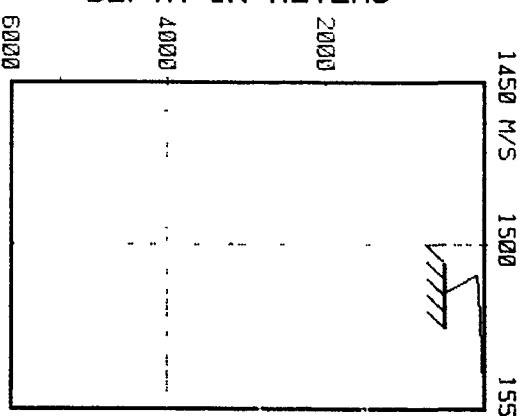
RER 3A SUMMER S 20 R 1640 F 2500

1450 M/S 1500 1550

NOISE (DB)



DEPTH IN METERS



TOTAL -50.6 DB

70

AREA 3A SUMMER

S 50 R 1540 F 2500

1450 M/S 1500 1550

LRAPP

DB LOSS

90

+

+

+

+

+

+

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130

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+

+

+

110

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DEPTH IN METERS

6000

4000

2000

1000

0

90

70

50

30

10

0

NOISE (DB)

-62

-40

-20

0

+

-

-60

-40

-20

0

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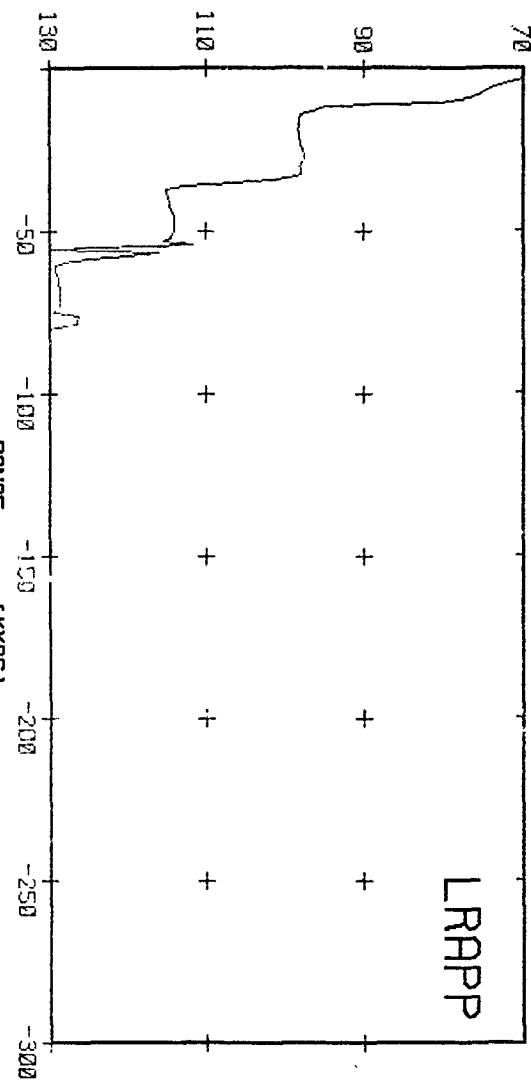
AREA 3R SUMMER

S 233 R 1640 F 2500

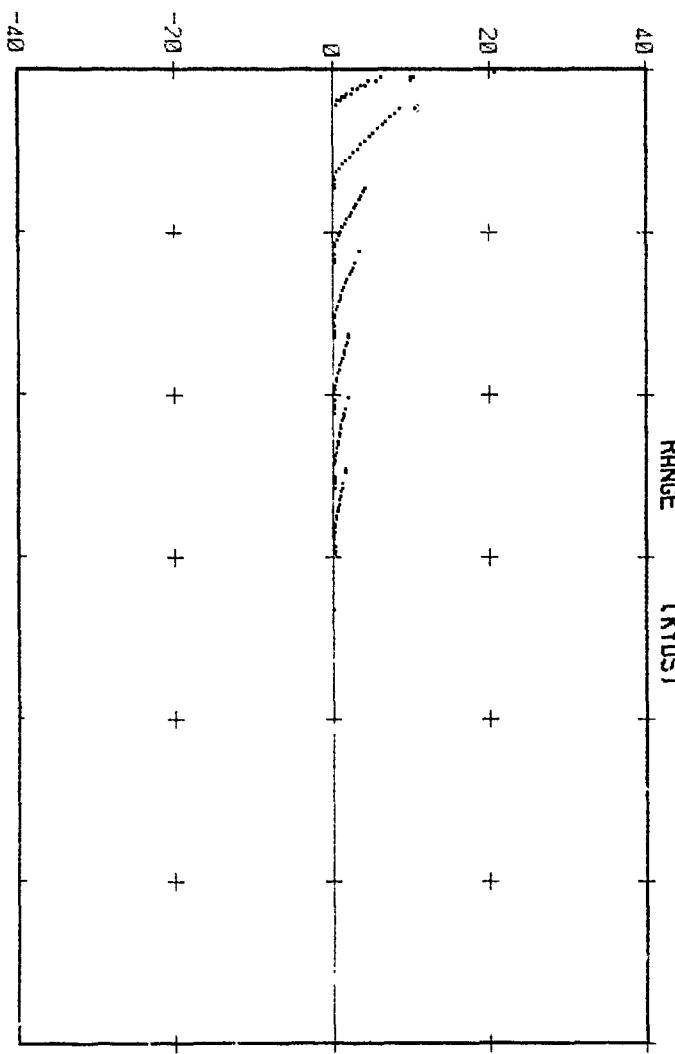
1450 M/S 1500 1550

LRAPP

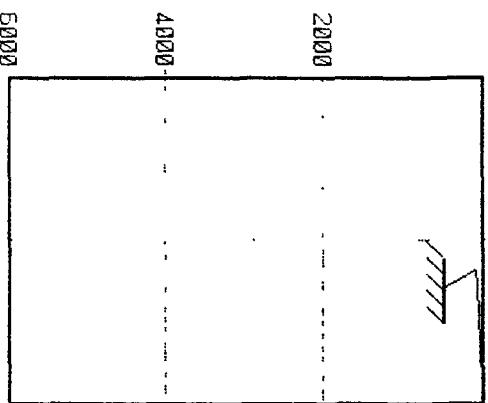
DB LOSS



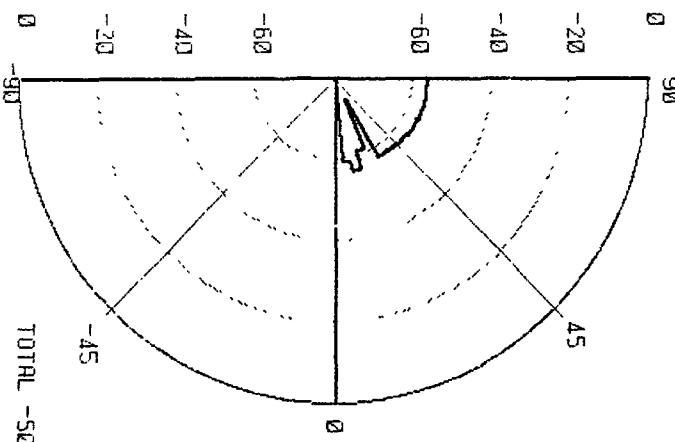
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



SUPPLEMENTARY

INFORMATION

1701 North Fort Myer Drive
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Telephone (703) 524-4870

TWENTY FIFTH
ANNIVERSARY

Bolt Beranek and Newman Inc.

29 May 1973



Defense Documentation Center
Cameron Station
Alexandria, Virginia 22314

Reference: Maury Center Report 011, Volume 7

Gentlemen:

Errors have been discovered in the ambient noise vertical directionality patterns on pages 106-110, 112, 113, 115, 116, 118, 119, 121, 122, 124 and 125 in Volume 7 of "Acoustic Environmental Scenarios and Predictions for ASW," Maury Center Report 011, October 1972. This volume was mailed to you recently.

Unfortunately, routine checks at The Fleet Numerical Weather Center, where the predictions were generated, and at Bolt Beranek and Newman Inc., where the reports were printed, failed to uncover these errors. Corrective measures are being taken and corrected pages to replace those noted above will be mailed to you as soon as they are available.

Sincerely,

Courtney B. Burroughs

Courtney B. Burroughs
Senior Scientist

CBB:cw



DEPARTMENT OF THE NAVY

OFFICE OF NAVAL RESEARCH
875 NORTH RANDOLPH STREET
SUITE 1425
ARLINGTON VA 22203-1995

IN REPLY REFER TO:

5510/1
Ser 321OA/011/06
31 Jan 06

MEMORANDUM FOR DISTRIBUTION LIST

Subj: DECLASSIFICATION OF LONG RANGE ACOUSTIC PROPAGATION PROJECT (LRAPP) DOCUMENTS

Ref: (a) SECNAVINST 5510.36

Encl: (1) List of DECLASSIFIED LRAPP Documents

1. In accordance with reference (a), a declassification review has been conducted on a number of classified LRAPP documents.
2. The LRAPP documents listed in enclosure (1) have been downgraded to UNCLASSIFIED and have been approved for public release. These documents should be remarked as follows:

Classification changed to UNCLASSIFIED by authority of the Chief of Naval Operations (N772) letter N772A/6U875630, 20 January 2006.

DISTRIBUTION STATEMENT A: Approved for Public Release; Distribution is unlimited.

3. Questions may be directed to the undersigned on (703) 696-4619, DSN 426-4619.

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By direction

Subj: DECLASSIFICATION OF LONG RANGE ACOUSTIC PROPAGATION PROJECT
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(Originator) | Pub. Date | Current Availability | Class. |
|----------------|------------------------|---|--|-----------|------------------------|--------|
| Unavailable | Unavailable | ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME VII. AREA 3A SUMMER PREDICTIONS FOR PASSIVE SONAR | Maury Center for Ocean Science | 721001 | AD0910342 | U |
| Unavailable | Unavailable | ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME VIII. AREA 3B WINTER PREDICTIONS FOR PASSIVE SONAR | Maury Center for Ocean Science | 721001 | AD0910343 | U |
| Unavailable | Unavailable | ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME IX. AREA 3B SUMMER PREDICTIONS FOR PASSIVE SONAR | Maury Center for Ocean Science | 721001 | AD0910344 | U |
| Unavailable | Unavailable | ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME V. AREA 2 SUMMER PREDICTIONS FOR PASSIVE SONAR | Maury Center for Ocean Science | 721001 | AD0911224 | U |
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| Unavailable | Unavailable | ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME X. AREA 4A WINTER PREDICTIONS FOR PASSIVE SONAR | Maury Center for Ocean Science | 721001 | AD0916556 | U |
| MC-011 VOL. 14 | Unavailable | ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME XIV. AREA 5 WINTER PREDICTIONS FOR PASSIVE SONAR | Maury Center for Ocean Science | 721001 | AD0916557; ND | U |
| MC-011 VOL. 13 | Unavailable | ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS FOR ASW. VOLUME XIII. AREA 4B SUMMER PREDICTIONS FOR PASSIVE SONAR | Maury Center for Ocean Science | 721001 | AD0916610; ND | U |
| MCR008 | Goodman, R. R., et al. | THE NEAT 1 EXPERIMENT (U) | Maury Center for Ocean Science | 721001 | NS; ND | U |
| Unavailable | Cherry, W. R. | LRAPP BEAMFORMER | Scripps Institution of Oceanography Marine Physical Laboratory | 721015 | ADA081876 | U |
| ONR ACR-186 | Gregory, J. B. | PROJECT LRAPP TEST BED- TECHNOLOGY USED IN THE DEVELOPMENT OF A DEEP-OCEAN STABLE PLATFORM (U) | Office of Naval Research | 721024 | AD0915237C
ND | U |
| MC-010 | Unavailable | CHURCH GABBRO EXERCISE PLAN- LRAPP (U) | Maury Center for Ocean Science | 721026 | ND | U |
| WHOI-72-87 | Daubin, S. C., et al. | THE ACODAC SYSTEM | Woods Hole Oceanographic Institution | 721101 | AD0756628; ND | U |
| NRLR7516 | Fleming, H. S., et al. | PROJECT NEAT 1 ENVIRONMENTAL DATA REPORT (U)
(USNS J.W. GIBBS) | Naval Research Laboratory | 721129 | AD NS: ND
AD 523744 | U |